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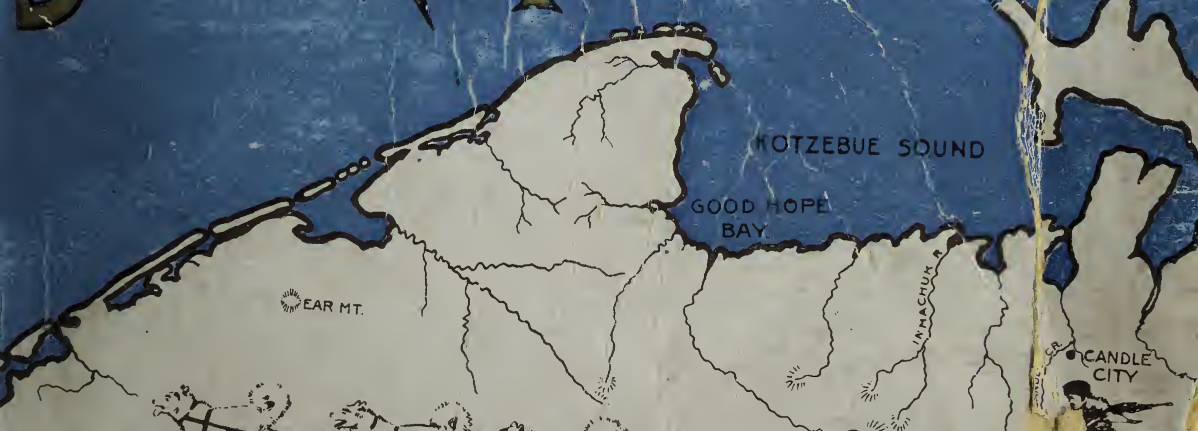
NOME AND SEWARD PENINSULA



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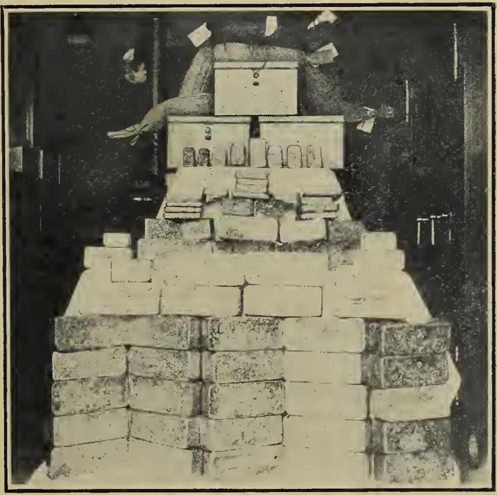

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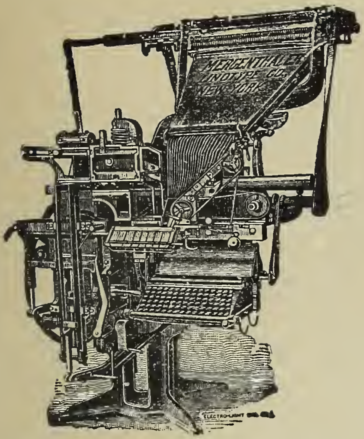
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NOME AND SEWARD PENINSULA

A BOOK OF INFORMATION ABOUT

NORTHWESTERN ALASKA

BY

E. S. HARRISON

SEATTLE, WASH., U. S. A.

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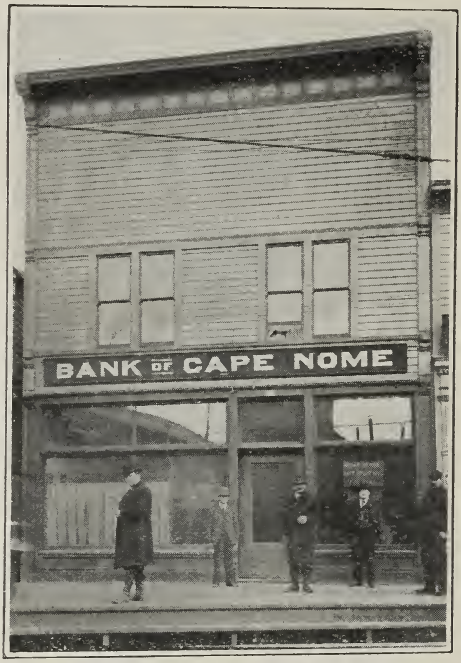

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Foreword

The object of this publication is to impart information about the physical features, climatic and other conditions, and mineral resources of Northwestern Alaska. The material that comprises this book was gathered by the author while he was editor of one of the Nome newspapers. It is fresh material, compiled from facts obtained at first hand. There is no exaggeration in these pages, and if reference to individual enterprise is marked with a suggestion of commercialism I want the reader to know at the outset that there is not a line in the text of this book for which the publisher has been paid.

This volume is a part of a larger book, comprising history, description, biographies and stories now in press. This edition will be printed on Japan deckledge paper and bound in morocco, and will be sold by subscription only.

E. S. HARRISON.

"When Harsh Surges Lash the Sounding Shore."

Courtesy of E. G. McMicken

Wonderland of Wealth

GLIMPSE OF COMMERCIAL AND SCENIC ALASKA—SEWARD PENINSULA, ITS AREA AND GENERAL PHYSICAL FEATURES—DESCRIPTION OF THE SEASONS IN NORTHWESTERN ALASKA—A WINTER IN NOME.

ALASKA is a wonderland of wealth. It is an immense depository of valuable and precious minerals. In restricted areas there are agricultural possibilities. Trees, principally spruce and not the best in the world for making lumber, forest a thousand valleys and as many mountain spurs. Some day these forests may have a commercial value. Millions have been made out of the fur industry of this country. Since the days of Russian traders, not long after the discovery of this land by Vitus Bering 164 years ago, the fur industry has been pursued and has yielded large profits. The many rivers of this vast region, and the inlets, bays and seas, which make the coast line 26,500 miles long, bounding this territory on the west and north, teem with fish. Already the salmon fisheries of Alaska are the most important in the world, and the thousands of square miles of cod banks in Bering Sea and the North Pacific Ocean are unexploited and almost unknown. The whaling industry in the waters that lave the shores of Alaska has produced a revenue of more than $100,000,000.

But the principal commercial value of Alaska is in its minerals. Gold has been found in extensive areas in every natural sub-division of Alaska, from Juneau to Kotzebue Sound, from the Canadian boundary line to the sea. There are developed gold mines in the Cook Inlet country and the region of the Copper River. On the easterly slope of the McKinley Range there is a mineralized zone comprising more than 50,000 square miles, which includes the now famous diggings of the Tanana. The water-sheds of the Kuskokwim comprise a vast and comparatively unexplored region, known to contain gold, silver, copper, lead and cinnabar. In the valley of the Yukon are the mining camps of Eagle, Circle and Rampart. North of the Yukon is the Nome country and the Koyukuk diggings, and beyond this region is the Arctic slope where gold has been found in many of the streams, from Good Hope River to the Colville, and where miners are now working rich claims in ground that has been frozen for ages.

Besides the placer gold of Alaska there is gold in ledges. In Northwestern Alaska there is tin in commercial quantities, and a prospect of the most productive and profitable tin mines in the world. The minerals in Alaska which have an economic value, and which exist in commercial quantities, are gold, silver, copper, lead, cinnabar, tin, coal and petroleum. Alaska has beds of bituminous coal of the best quality ever found in the West, showing assays of seventy-nine per cent. carbon. There are many other minerals in the country, among them graphite, mica and bismuth, which some day may have a commercial value.

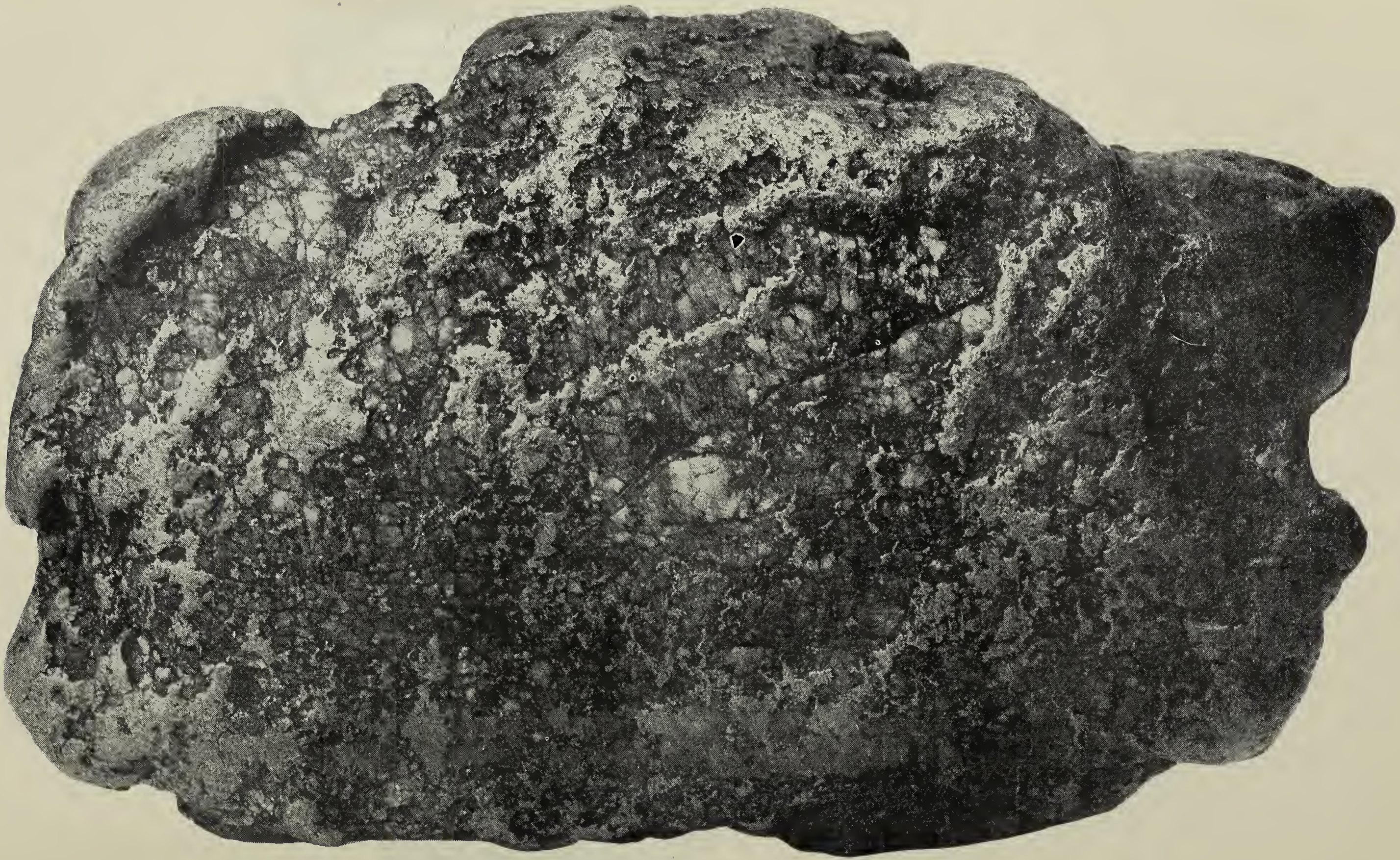
And in addition to all these is the probability of discovering some of the rarer and very valuable minerals and precious stones.

This is a glimpse of commercial Alaska, but there is another Alaska. It is a country of magnificent area and gorgeous scenery. The native name is Al-ia-as-ka, "the great country." This Alaska contains an area of 591,000 square miles and has a coast line greater than the circumference of the earth. It reaches through twenty-one degrees of latitude, and its extreme width comprises fifty-four degrees of longitude. The meridian passing through Nome lies more than 300 miles to the westward of the Sandwich Islands. The extreme width of Alaska is as great as the distance between Savannah and Los Angeles, and the extremes of latitude represent the distance between Mexico and Canada. In this great extent of Alaskan territory are many natural scenes both of beauty and grandeur. The glaciers of Southeastern Alaska are the largest in the world. Compared with these great ice rivers the glaciers of Europe are as insignificant as the fire that Gulliver extinguished in the Palace of Liliput. Majestic Mt. McKinley, its summit capped with eternal snows and rising to an altitude of more than 20,000 feet, is the highest mountain on the North American continent. The president of the United States Geographical Society, recognizing the value of Alaska from a commercial point of view, has said that the principal asset of this wonderful country is its scenery. A more definite idea of the vast extent of this Northland may be obtained from comparison. Alaska is larger than the combined areas of California, Nevada, Arizona, Oregon and Washington; and today there are less than 50,000 white inhabitants in this big country.

Alaska is a paradise for sportsmen. In that great and as yet unexplored country south of the Yukon, particularly at the head-waters of the Kuskokwim, and near the base of Mt. McKinley, are many kinds of game. Here may be found a species of the grizzly bear as large and ferocious as those that inhabited the wild West of the United States fifty years ago; here are herds of mountain sheep; bands of caribou that number hundreds; the moose, the most stately game of the wilderness; grouse in flocks of thousands; rabbits, including the arctic hare which grows to the size of a small lamb; and fish in every stream. There is also a great variety of fur-bearing animals, many wolves and foxes. The principal variety of fish indigenous to the streams of Northern Alaska is grayling, a gamey fish that furnishes rare sport for the angler and a delicacy for the table.

Such is Alaska, but an attempt at a minute description of the country, its features, resources and general conditions, necessitates a division of the immense area. The features and resources of this big, new country are too diverse for description in one story. There are some parts of the country that are without alluring scenic features; there may be parts that are barren of resources. In a territory so large as this there is almost every phase of country.

The division of Alaska which it is the province of this volume to discuss, is not noted for its natural scenery; but there is compensation for the lack of that which pleases the eye in the immense mineral wealth that lies hidden in the frozen ground; and this suggests the greatest impediment to the development of the larger part of Alaska. The climate is not favorable. The winters are long and cold. In Northwestern Alaska the snow covers the ground seven months of the year, and although the sun shines almost continuously in this high latitude during the short summer he is unable to extract the frost of ages which has put a lock, hard to open, on the gold in the gray old hills of this region. No one should think that because this country contains probably the greatest mineral wealth of any similar



Photograph by B. B. Dobbs.

ALASKA'S BIGGEST NUGGET, ACTUAL SIZE.
Discovered in Bench of Anvil Creek. Weight 182 Ounces, Value $3,285.

Photograph by B. B. Dobbs.

ONE THOUSAND POUNDS OF GOLD BRICKS.
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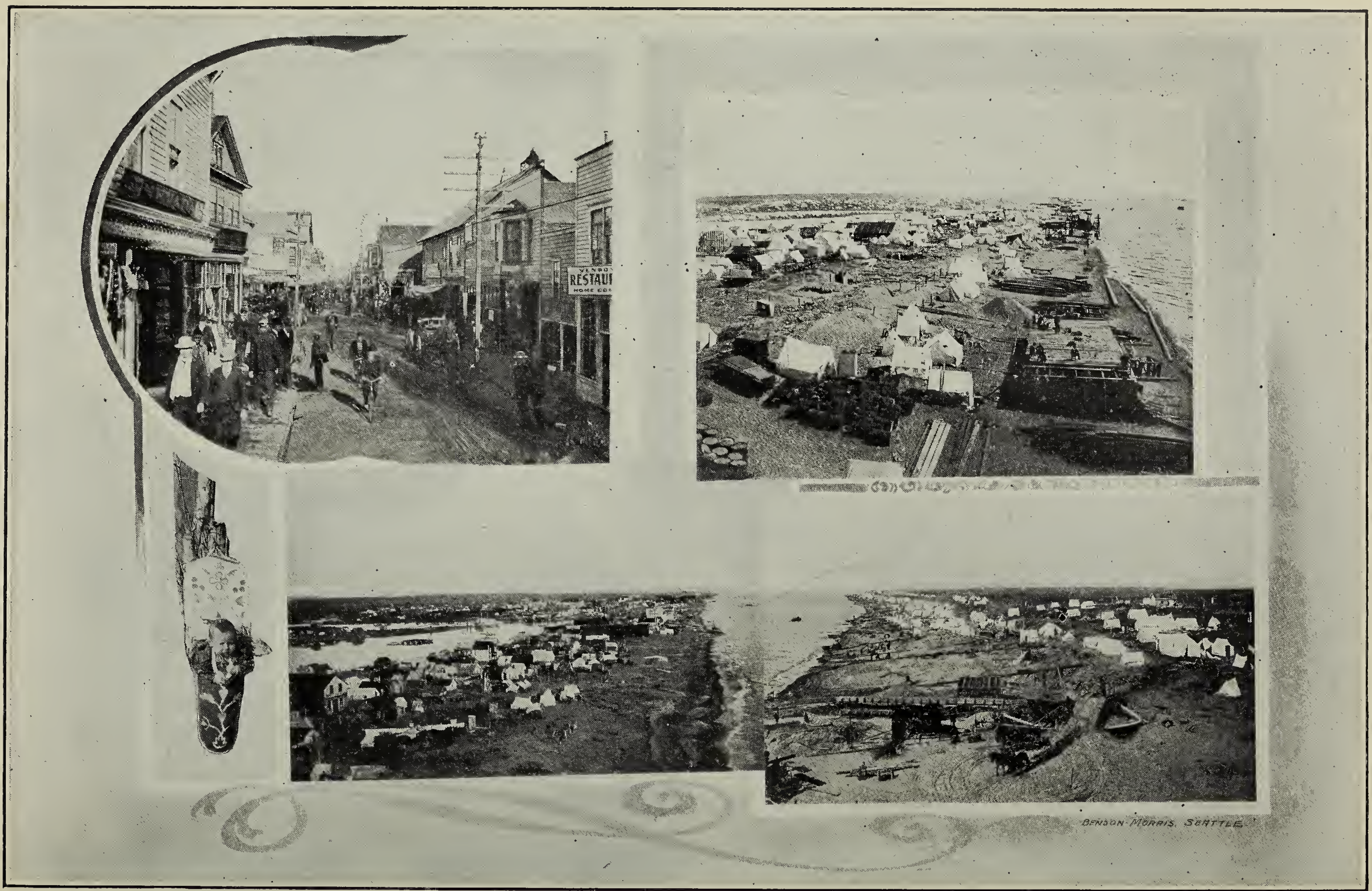
area on the earth that this wealth can be had without hard labor, infinite pains and the surmounting of difficult obstacles. In a country where the season of active work does not comprise more than one hundred days in the year it is apparent that development of the resources must be slow. If man's ingenuity and inventive genius could overcome the winter conditions to be found near the Arctic circle this country would be a veritable cornucopia of gold. But the impediments King Frost has put in the way of the miner necessitates a greater amount of labor to extract valuable minerals; and the slow development will make this country valuable at a time in the remote future when its mineral deposits would have been worked out had they been more favorably situated.

The Nome country comprises Seward Peninsula, but there is a large contiguous territory which may be discussed under the topic that forms the caption of this book. Seward Peninsula is shaped like a great flint arrowhead, the point at Cape Prince of Wales, the neck being the portage between Norton Sound and Kotzebue Sound, a distance of about seventy-five miles. The peninsula has an area of 22,700 square miles and in extent is about one-eighth of that part of Alaska north of the Yukon river.

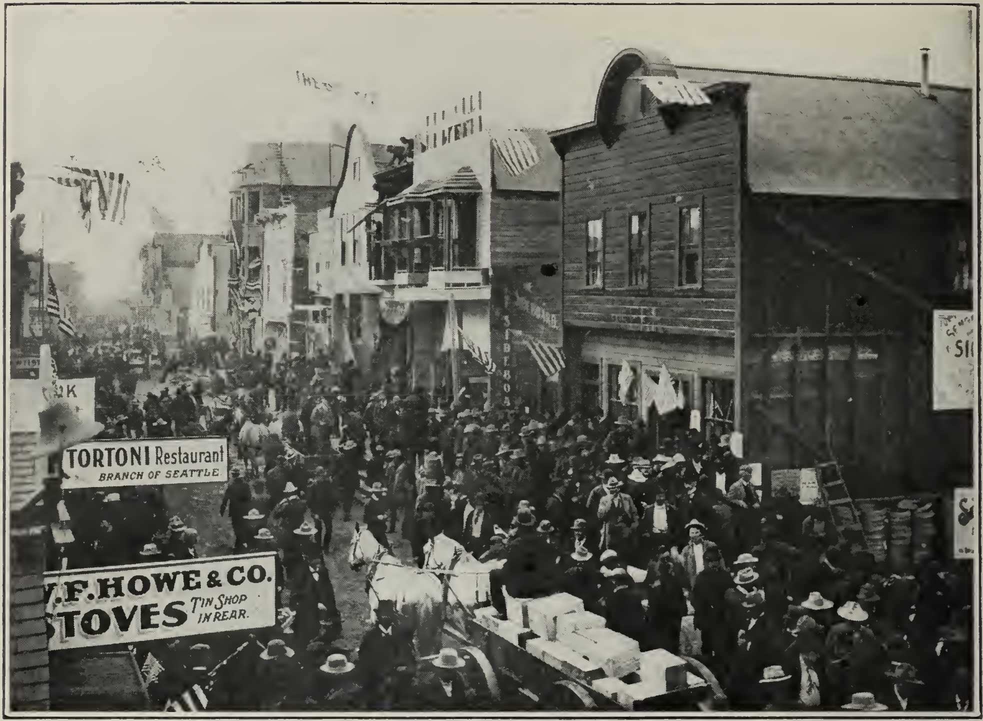
An idea of the topography of the country cannot be conveyed in any general term. To a person who visits Nome and sees for the first time from the deck of a steamer the Nome country, there is very little in the perspective that possesses feature or color. He sees a moss-covered plain called tundra, from three to four miles wide, extending back from the



Front Street.
Birds Eye View from Sandspit.

NOME, ALASKA.

In 1900, A City of Tents
Tented Homes of Beach Miners in 1900



A BUSY DAY—FRONT STREET IN 1900

sea to the low, round-topped hills; beyond these monotonous hills, which are without tree or shrub, is a range of mountains some thirty miles distant. These mountains have the native name of Kigluaik, but to the prospectors they are the Sawtooth Mountains. This name suggests their ragged appearance, the sharp outlines being granite peaks. Mt. Osborne, the highest peak on the peninsula, is in this series, and has an altitude of 4,700 feet. Northeast of the Sawtooth range are the Bendeleben Mountains; trending in a northerly direction from Norton Bay are the Darby Mountains, and north of Port Clarence are the York Mountains; but none of these give the country a rugged appearance. A great many streams of water, some of them called rivers, have their sources in the higher altitudes and flow through the narrow valleys in the hills to the sea. Near their sources some of these rivers have a rapid descent, making rapids, but as they approach the low lands they become sluggish and flow slowly through great gashes which they have cut in the tundri.

The water-sheds of the peninsula are many, and streams flow toward all points of the compass. An area from Golovin Bay northward to Cape Prince of Wales, a distance of 200 miles and having a width of from thirty to fifty miles, drains into Bering Sea. Another large area, comprising what is known as the Council City region, is drained by the Fish River and its tributaries into Golovin Bay. Several rivers flow into Norton Sound. The Arctic slope of the peninsula sends its waters into Kotzebue Sound and the Arctic Ocean. Water courses are numerous in a country where summer rains are heavy and for several months almost constant; and where the winter snows cover the ground to a depth of from four feet to ten feet, accumulating in canyon drifts to a depth of from fifty feet to one hundred feet, there must be many streams for drainage.

I have noted the generally bald and desolate appearance of the country, but in the Norton Bay region there is a large area covered with spruce timber. By proclamation of President McKinley this timber land has been converted into a forest reserve. Council City is in a timber country. Council City is eighty odd miles inland from Nome. In the valleys of several of the principal streams on the Arctic slope there is timber, notably on the Kewalik and the Kobuk. This timber is mostly spruce, and trees attain to the size of fourteen or sixteen inches in diameter. There is some cottonwood and some alder. Every water course of any importance in Northwestern Alaska is fringed with willows, in some places growing to a height of eight feet or ten feet and a diameter of from four inches to six inches. But the willow growth is usually stunted, occurring most often in dense thickets. These willows furnish the only fuel, for prospectors and miners far away from base of supplies, to be had in thousands of square miles of territory; and the difficulty of making a fire and preparing food with green willows for fuel can be imagined better than described.

As soon as the snow disappears the country is clothed with verdure, and decorated with many varieties of pretty wild flowers. These delicate little flowers have the temerity to bloom on sunny slopes close beside belated melting banks of snow. The almost continuous sunshine accelerates the growth of all kinds of vegetation so that transition from winter to summer when the snow has melted is so sudden as to seem almost magical. The snow

FRONT STREET AFTER A BLIZZARD.

never entirely disappears until late in June. From the first of May until the middle of August the daylight is continuous. At Nome in the shortest day the sun is hidden less than three hours, but is so near the horizon the land is flooded with a soft light so that one can see to read ordinary print. This continuous daylight lengthens the ordinary working season, as there is no cessation of work caused by night. At the mines the hum of machinery never ceases. The early part of the summer season is usually clear and dry, and the latter part filled with storms and almost constant rain. I have not mentioned spring time as, judging by the usual signs, there is no such period of the year in Northwestern Alaska. We have but two seasons, a short summer and a long winter. A more beautiful and salubrious climate could not be desired than the ordinary early summer at Nome; nor could one easily imagine a more tempestuous climate than the latter part of some of the summers which have been experienced in this region

WHEN THE ICE BREAKS IN SNAKE RIVER.

Evidences of the approach of winter are seen late in September, sometimes in the latter part of August. The first frosts change the hue of the landscape. In October ice forms on the streams, a passing cloud brings a snow-squall, miners begin to have difficulty with frozen water in their sluice-boxes, and by the fifteenth or twentieth of this month mining operations are pretty generally suspended. The snow after this usually comes to stay; nights are cold and the days growing shorter, so that the sun does not have an opportunity of undoing the work that King Frost does during the night. The waters of Bering Sea become mushy from partial congealation, and great floes, which are formed farther north and have been detached by winds and currents, float down the sea in front of Nome. They may attach themselves to the shore to be broken again by wind and waves and float away. Before this occurs, however, the last steamer has sailed from Nome, the small craft have been brought into the mouth of Snake River to their winter quarters, and numerous lighters, used for transferring freight and passengers from steamers to the land, have been brought to the shore and beached. The roadstead, in which there were steamers all summer long and which during this time was a scene of great activity, is deserted. On a morning usually in November, but sometimes as late as December, the inhabitants of Nome awaken and look out from their homes over the sea of ice. Winter has begun in earnest and the community realizes that for the next seven months it is sequestered, isolated, and shut off from the balance of the world by barriers of ice and snow. From this time until the ice goes out, their only means of communication with the outside world are dog teams and the telegraph. Thanks to Captain Wildman, of the United States signal corps, last winter Nome for the first time was in direct telegraphic communication with the states. This communication was established by the wireless system between St. Michael and Port Safety, a distance of 100 miles. Two winters prior to last winter the telegraph line was completed along the Yukon, and Nome felicitated itself in having a telegraph station, Unalakleet, only 240 miles distant.

Photograph by B. B. Dobbs.

THE ROADSTEAD AT NOME.
Photograph Taken at Midnight in June.

While the winters in the Nome country are long and cold they are not so severe as one would imagine. In a few years a person becomes acclimated and all dread of the cold disappears. At Nome the thermometer sometimes falls to forty degrees below zero. Inland, a distance of fifty miles or more, the thermometer drops much lower, sometimes indicating fifty-eight degrees or sixty below zero. This temperature is endurable by adopting the native dress of fur parka and using felt shoes, or mukluks, the native skin boot, and protecting the hands with fur mittens. People travel from one part of the peninsula to another. Commerce between the camps of the peninsula is interrupted only by blizzards. It is when the wind blows that there is danger on the trail. Between Nome and Council City hot-air stages run pretty regularly, the schedule being interrupted only when the blizzard blows. A low temperature does not cause great inconvenience to the man who is properly clothed, if the air be still, but the cutting blast of the blizzard in zero weather cannot be withstood for any great length of time. Blizzards are of frequent occurrence, and they often come suddenly with little or no warning. The men who have lost their lives in the blizzards of Northwestern Alaska generally were people who did not understand the lore of the land or else exercised poor judgment in attempting to travel at a perilous time. Since the settlement of the country and the establishment of road-houses along the trails the danger of freezing is not serious. A thaw in midwinter seldom occurs. The miner prepares a cache for his meats and such stores as will not be injured by freezing, as the Northland in winter is a very successful cold storage plant.

MIDWINTER MIDNIGHT VIEW OF NOME.
Illustrating the "Awful Darkness of the Arctic Night".

As there is almost continuous day in June so there is almost continuous night in December. In the shortest day the sun describes an arc in the southern heavens of about one-eighth of his circle. He rises in the south and sets in the south, and is so far away that there is scarcely a trace of coronal rays. He looks like a big disk of burnished gold, and his rays furnish a weak light but no perceptible heat. In the winter there is an absence of almost all color except white, save in the mornings and evenings. Before sunrise and at sunset frequently the southern skies are flooded with the most gorgeous colors. If one has not seen a sunrise or a sunset in high lalitudes one cannot imagine the intensity of the colors, and it is useless to attempt to describe them. With the exception of these color interludes the perspective in every direction, landward or seaward, is an unbroken white. The white level tundra reaches back to the white hills, the white hills to the white mountains, and over all "That inverted Bowl they call the Sky" is gray and cold.

At Nome a winter day sees a city partially covered with snow. Smoke from a thousand chimneys curls through the crisp air. A door of a store or a saloon is opened and the warm air rushing from the interior of the building makes a fog as it rushes out. The water vendors, some of them still using the primitive coaloil-can as a receptacle for the water which they have taken from holes made through the ice of the river, may be seen driving their frost-covered teams through the streets. Men with dog teams are scurrying along the trails, up or down the beach or across the tundra. Out on the ice of Bering Sea may be seen a dozen or a hundred fishermen faithfully bobbing through holes in the ice for tomcod.

"Nome Has a Ski Club."

As there is but little work to do during the winter season there is plenty of time for the social amenities of life, and the residents of Nome devote a great deal of time to social en-

Photograph by O. D. Goetz.
"Bobbing Through the Ice for Tomcod."

tertainments. Dances, socials, fairs, amateur theatricals, and everything and anything that will relieve the tedium of the long winter nights receive a liberal share of attention. Nor is there a lack of outdoor sports, the principal of which is skiing. Nome has a ski club, and tournaments are held during the winter when prizes are awarded both for jumping and speed. Indeed, traveling with ski is a favorite method of going from town to the creeks or across country to neighboring camps. It is an interesting picture to see a man on ski laboriously ascending a hill until he gains the summit, from where to the base, with ski pole between his legs as a brake, he skims down the white descent like a bird, the ski pole cutting the snow into minute particles and making a feathery trail behind him. Sleighing behind dog teams is a favorite, healthful, and invigorating recreation. Ladies snugly wrapped in their furs, sitting in a sled behind a team of huskies, the driver running behind, holding on to the handlebars, jumping on the runners and riding whenever it is convenient, is a very common sight at Nome.

The people in Nome live comfortably during the winter, having made provision for the long cold spell through which they know they have to go. Many residences and store buildings are provided with heaters, or baseburner stoves in which anthracite coal is burned. Even those who live in cabins are usually "snug as a bug in a rug." No hardship nor inconvenience is experienced in this north country during the winter by people who do not have occasion to travel. The healthfulness of the country is one of its marked features.

READY FOR A SLEIGH RIDE.

Microbes can live in ice, but during their hibernation they are innocuous. Doctors say that wounds of any character quickly heal by first intention, and that it is an excellent locality in which to perform surgical operations. While the extreme cold of the winter is very low temperature it must not be inferred that all the weather is of this character. There are many days when the thermometer is above zero, but a winter thaw is infrequent.

Before the close of navigation all supplies necessary for the winter use are shipped in and stored. In Nome there are great yards filled with coal so that there never is any danger of a shortage of fuel. Provisions of every kind are kept in stock by the merchants, so that the residents of Nome have plenty to eat and of good quality. We are short on green stuff, but a hot-house on the sandspit across the river from Nome is a recent innovation, and fresh vegetables are enjoyed by those who can pay the price. A cucumber flower has been sold for one dollar, and the purchaser took his chances of the flower developing into a cucumber. Eggs at the approach of spring are mellowed with age, and better fit for a reception of a bad actor than for domestic use. Many gastronomically fastidious people lose their appetites for cold storage meats late in the season, and everybody is surfeited with canned goods before the arrival of the first vessel in the spring. But considering the environments and conditions Nome people live well and enjoy themselves in the winter.

Photograph by B. B. Dobbs.

ARRIVAL OF THE JEANIE, MAY 24, 1901.
Two Miles of Solid Ice Between Nome and Open Water of Bering Sea.

When the season of spring approaches, the season when grass greens the fields and the hill slopes in a temperate zone, when orchards bloom, and the robin sings, and flowers blush by the wayside, the people of Nome begin to look forward anxiously and longingly for the arrival of the first steamer. The sun has passed the vernal equinox, and the longer bright days are making a perceptible effect upon the wide expanse of snow-covered earth.

"The Ice Quietly Floats Away."

The sun is beginning to unlock the icy fetters of the streams, and the brightness that fills the days is so dazzling that snow blindness is an ailment which must be guarded against. White is still the only color in the perspective. There has not been enough heat to melt the snow so as to reveal a bare spot of earth. The snow birds, the first feathered messengers of the warm season, have not yet returned. Nor has there been seen as yet a northern flight of water fowl which a few weeks later will be conspicuous a few miles south of town and just above where the waves and tides, assisted by the warm days, are breaking up the ice of the sea.

After the snow has partially melted, and the streams are running in torrents, the ice on the sea breaks from the shore and quietly floats away. During some bright day, or in the dimmer light of the night, early in June a keen-eyed Eskimo raises the shout, "Oomiakpuk!" which is his language for steamboat. Bells ring, whistles blow, and everybody, no matter what the hour may be, rushes out and seeks a position where the horizon of the sea can be scanned. The arrival of the first steamer in Nome every spring is an incident of great moment. It marks the close of a long period of isolation and the beginning of renewed industrial activity.

"Cribbed, Cabined" and Covered With Snow.

The Land *of* Pay

DESCRIPTION OF THE MINING DISTRICTS, NOME, COUNCIL, KOUGAROK, PORT CLARENCE AND FAIRHAVEN—THE KOBUK REGION AND THE FAR NORTH COUNTRY—THE COUNTRY ADJACENT TO NORTON SOUND—THE NOME BEACH—THE KUSKOKWIM, A CONTIGUOUS AND COMPARATIVELY UNKNOWN REGION.

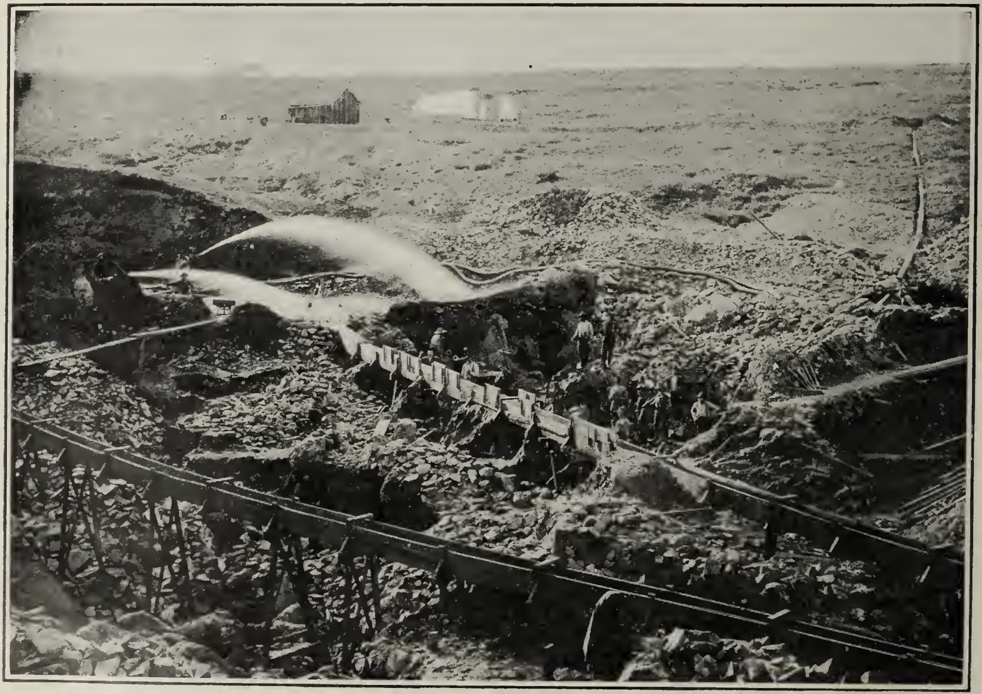
PRIOR to the discovery of gold Seward Peninsula was a barren desolate region, inhabited by a few white men who were either traders or missionaries, and native tribes that lived in villages. The gold discovery which proclaimed to the world a new strike was made on Anvil Creek in September, 1898. Three prospectors, Jafet Lindeberg, Erik O. Lindblom and John Brynteson, were the fortunate men who made the discovery. G. W. Price was returning from the Kotzebue country, there having been a stampede to that region in this year. He had come down to St. Michael for the purpose of investigating a report of gold prospects in the Golovin Bay country. As Mr. Price was a practical mining man the secret of the great strike was imparted to him, and his co-operation was solicited in order that the property discovered might be properly staked and the district organized according to law. The prospectors returned to the scene of the strike, and although the season was growing late, the ground freezing and snow falling, they succeeded in a few days in panning and rocking out under adverse conditions gold dust valued at $1,800. No attempt was made to work the ground during the winter of '98 and '99. The following spring a great many people came down the Yukon from Dawson, and many who had heard of the strike and were anxious to be early on the ground, came by steamers from the states. The work that was accomplished in the season of 1899 by the crude method of sluice-boxes and shoveling showed unmistakably that the discovery was a bonanza. During the summer of '99 gold was discovered in the beach and this strike was unquestionably the greatest poor-man's diggings ever found.

The output of this season caused a great stampede in 1900, and 15,000 people were landed at Nome within a fortnight. The tents of a white city sprung up like mushrooms, but unfortunately for the country most of these people were not miners, and many of them never could be miners. They brought with them every conceivable device of impracticable mining machinery, and they failed. Their tale of woe was a serious detriment to the development of the country. Nome received the reputation of being a failure as a mining camp. But notwithstanding all the knocks it received, from people who were to blame instead of the country, there has been a steady progress in the development of this region. Those who are best qualified to know believe that Seward Peninsula is the greatest and most valuable area of gold placers in the world. There are values also in quartz, and there may be tin enough in this country to can the earth.

THE NOME DISTRICT.

The Nome District is that area lying between the westerly water-shed of Golovin Bay and the easterly water-shed of Port Clarence Bay, and extending northerly to the Sawtooth Mountains. It embraces the wonderfully rich diggings on Anvil Creek, Dexter Creek, Dry Creek, Glacier Creek and Snow Gulch, which have yielded millions of dollars. The formation of this country is what is known as mica-schist. The gold is found in the beds of streams where it has been concentrated for ages. It is also found in ancient channels which are known as bench diggings, and it is found almost everywhere in lesser quantities in the tundra and scattered through the hills.

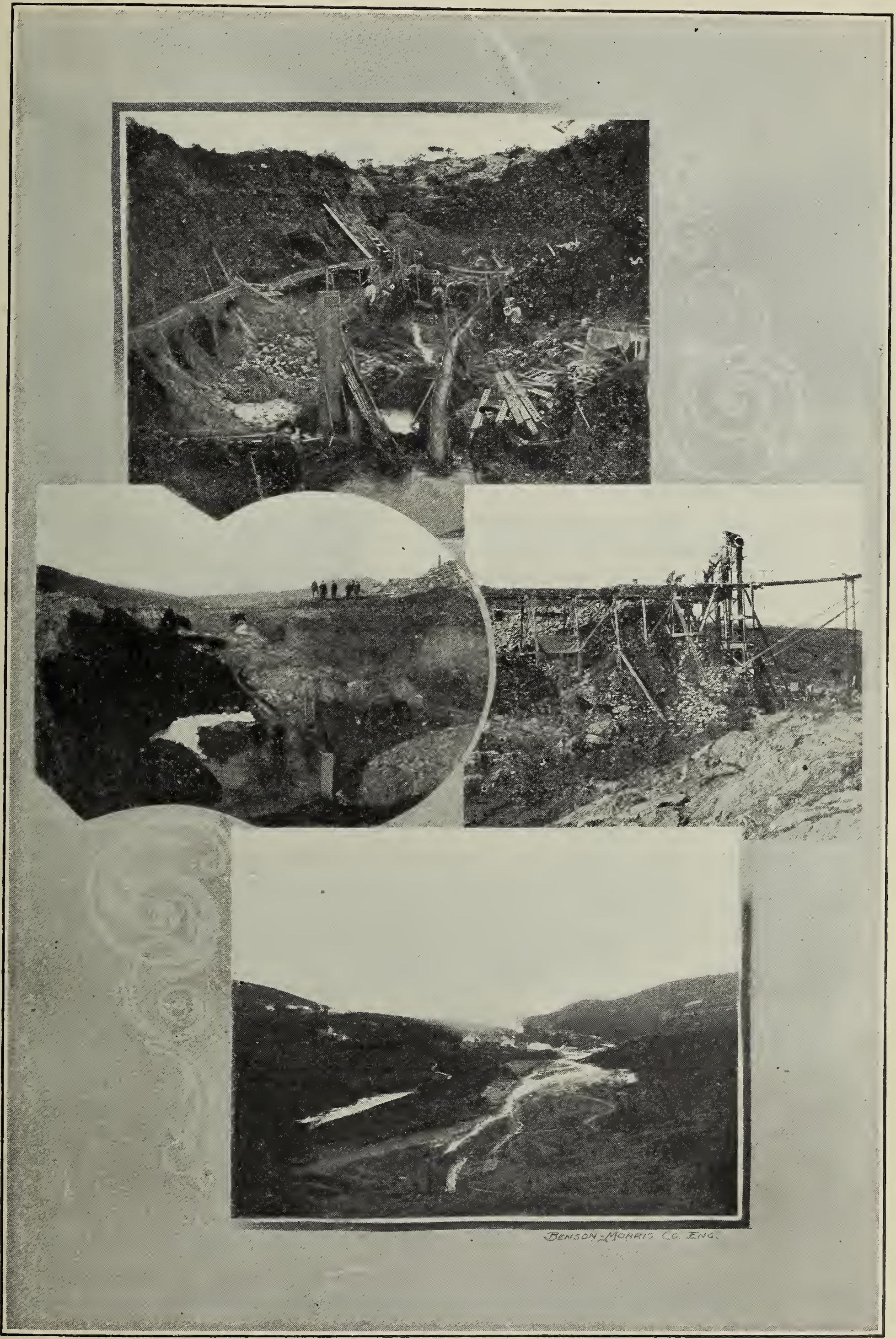
Anvil Creek has been the greatest producer of all the streams of this section. The yield from Anvil Creek has been more than $6,000,000. Nor is this stream by any means worked out. No one can look into the ground and say how much gold remains there, nor will the total values in this basin be determined until all the benches are washed down and the tailings from the workings in the stream are re-washed. Every year new discoveries are being made in the benches on the left limit of Anvil Creek. Three old channels have been found which carry gold in large quantities. It is not safe for a writer to assume the role of prophet,



Photograph by B. B. Dobbs.

NO. 1 GRASS GULCH, HEAD OF DEXTER CREEK.

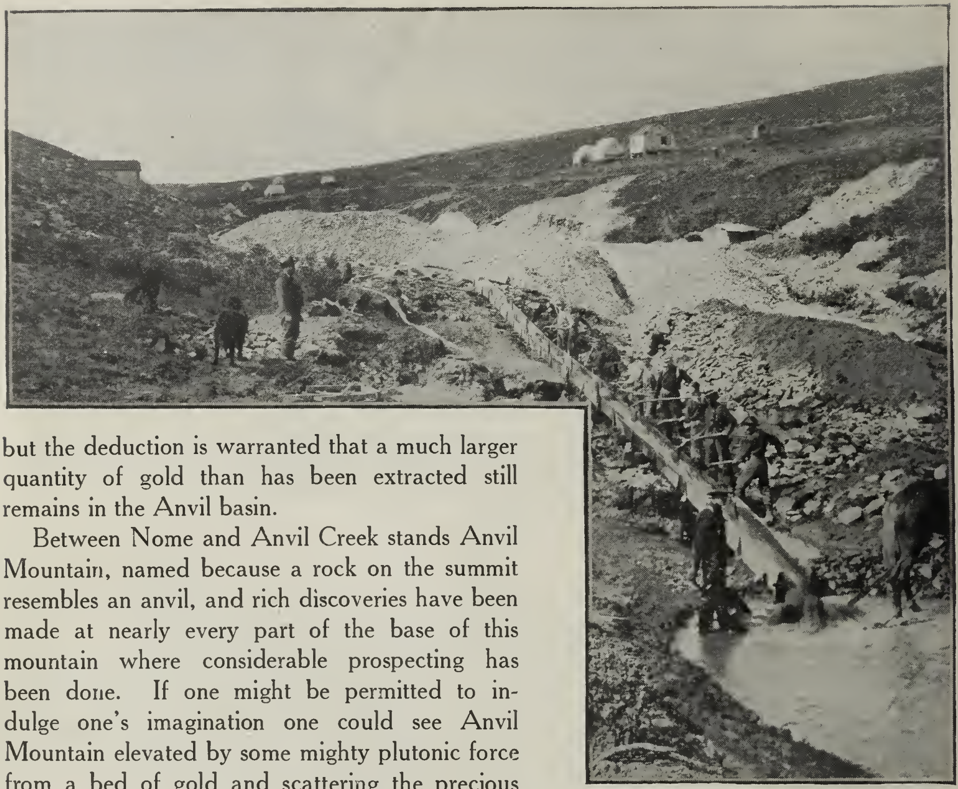
Property of O'Sullivan and Wilkens.



Photograph by B. B. Dobbs.

ANVIL CREEK AND CLAIMS OWNED BY PIONEER CO.

This Stream Has Yielded More Than $6,000,000 of Gold.



NO. 7 DEXTER CREEK
Operated by I. B. Sverdrup.

but the deduction is warranted that a much larger quantity of gold than has been extracted still remains in the Anvil basin.

Between Nome and Anvil Creek stands Anvil Mountain, named because a rock on the summit resembles an anvil, and rich discoveries have been made at nearly every part of the base of this mountain where considerable prospecting has been done. If one might be permitted to indulge one's imagination one could see Anvil Mountain elevated by some mighty plutonic force from a bed of gold and scattering the precious mineral all around it. Late in the season of 1904 Mr. J. C. Brown, prospecting a small stream, called "Little Creek," and properly named, near the southwestern base of Anvil Mountain, discovered the richest spot of placer that has ever been found in the peninsula. Pans of gravel from bedrock yielded from $150 to $180 the pan, and the product of this mine for winter of 1904-'05 is estimated at $1,000,000. A thousand miners and prospectors had walked over this ground, some of them repeatedly, and had never considered it of sufficient value to warrant the sinking of a hole. It is a part of the tundra and is an evidence of what may be found by people who dig in some unlikely looking places.

Since the strike on Little Creek the Pioneer Mining Company has struck it rich in the Portland Bench, a piece of tundra ground a short distance southeast of Little Creek. Advices received this winter from Nome by Mr. Lindeberg, president of the company, indicate phenomenally rich diggings. Mr. Stevenson, the manager during the winter of the Pioneer Company, writes that three pans of gravel taken from bedrock yielded respectively 2.5 ounces, 4.80 ounces and 8.10 ounces of gold. On February 27, 1904, the assistant manager panned two pans, one yielding six ounces and the other ten ounces of gold. The most valuable pan of gravel taken from this mine contained gold of the value of $1,200.

These strikes are not far from Cooper Gulch, Holyoke and Saturday Creeks where valuable diggings have been worked since 1900. Bourbon Creek is another stream that has its source in this vicinity and at the base of Anvil Mountain, and it contains pay. Dry Creek has its source on the easterly side of Anvil Mountain and both the stream and its benches have shown some very valuable mines. Just across the divide, going north from the head of Dry Creek, is Dexter Creek, having its source at the northeasterly base of Anvil Mountain, and this is one of the rich creeks of the peninsula. Dexter Creek flows in an opposite direction to the course of Anvil Creek, and between the head waters of the two streams there is a ridge several hundred feet high and a mile or more across. In this ridge, or bench, are the famous deep diggings of the Nome country, the Snow Flake and Sugar claims and others, which have produced many thousands of dollars. In these claims the pay has been found at a greater depth than 100 feet below the surface. It will be seen from this description that a complete circuit of Anvil Mountain has been made.

ANVIL ROCK

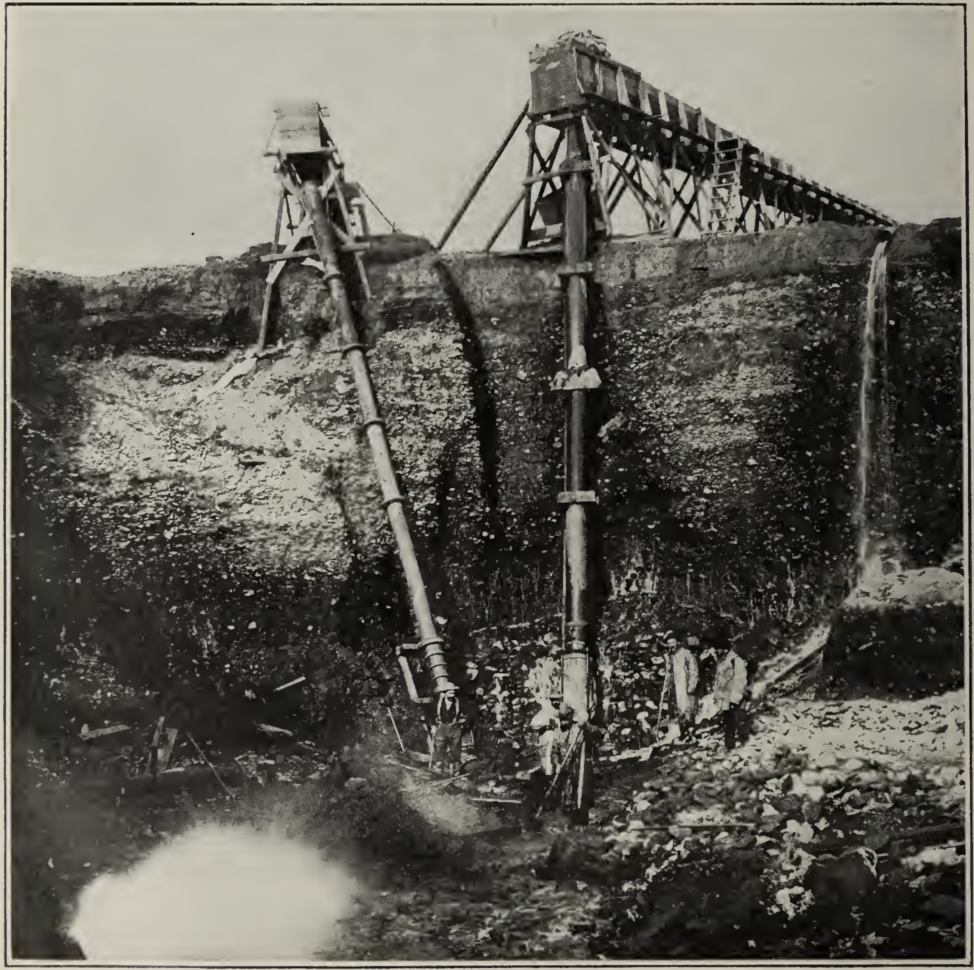
A mining expert of large experience and recognized ability told me that he believed he could stand on Anvil Mountain and that within the range of his vision there lay an area of mineral land containing more placer gold values than any other similar area in the world. Between Nome River and Snake River the distance is not more than six miles and from Nome to Glacier the distance is about nine miles. The country within these boundaries may not be the richest spot in Northwestern Alaska, but the quantity of gold that will come from this area will be prodigious.

While I am writing the manuscript of this book the news comes from Nome of a great strike in the tundra within the city limits. An old beach line was discovered several seasons ago in the tundra east of Nome, and profitable mining has been done in this locality. The old beach was located first at Hastings Creek seven miles east of Nome, and values have been taken out of this ground in spots from Peluk Creek in the outskirts of the town to the place of the first discovery. Part of the town of Nome is built upon a deposit of beach sand carrying good values. Trades people who have excavated for cellars have washed up their dumps, and got more than enough gold out of them to pay for the excavating.

West of Nome are Cripple River and Sinuk River. While no very rich deposits have as yet been found on these streams there is a wide area of what is called low grade ground. What more thorough and systematic prospecting may uncover remains to be seen. It is known that there are evidences in this region of a very large ancient water course. There are great gaps in the mountains filled with gravel and in the most likely looking places prospectors never have sunk to bedrock. Hydraulic operations are planned for this part of the country, some ditches have been constructed and other are under way. The known values are sufficient to make operations on a large scale by hydraulic methods profitable. Among the notable features of this part of the country is a vast gravel deposit known as Irish Hill. The finest grade of gold ever found in Seward Peninsula has been taken from this hill. The question that confronts the miner of this particular part of the Nome country is the need of capital to build ditches and utilize the water in such a way that large quantities of gravel may be worked at a low cost. There remains the possibility during such operations of uncovering ancient channels where the gravels have been concentrated so as to make the deposit very rich.

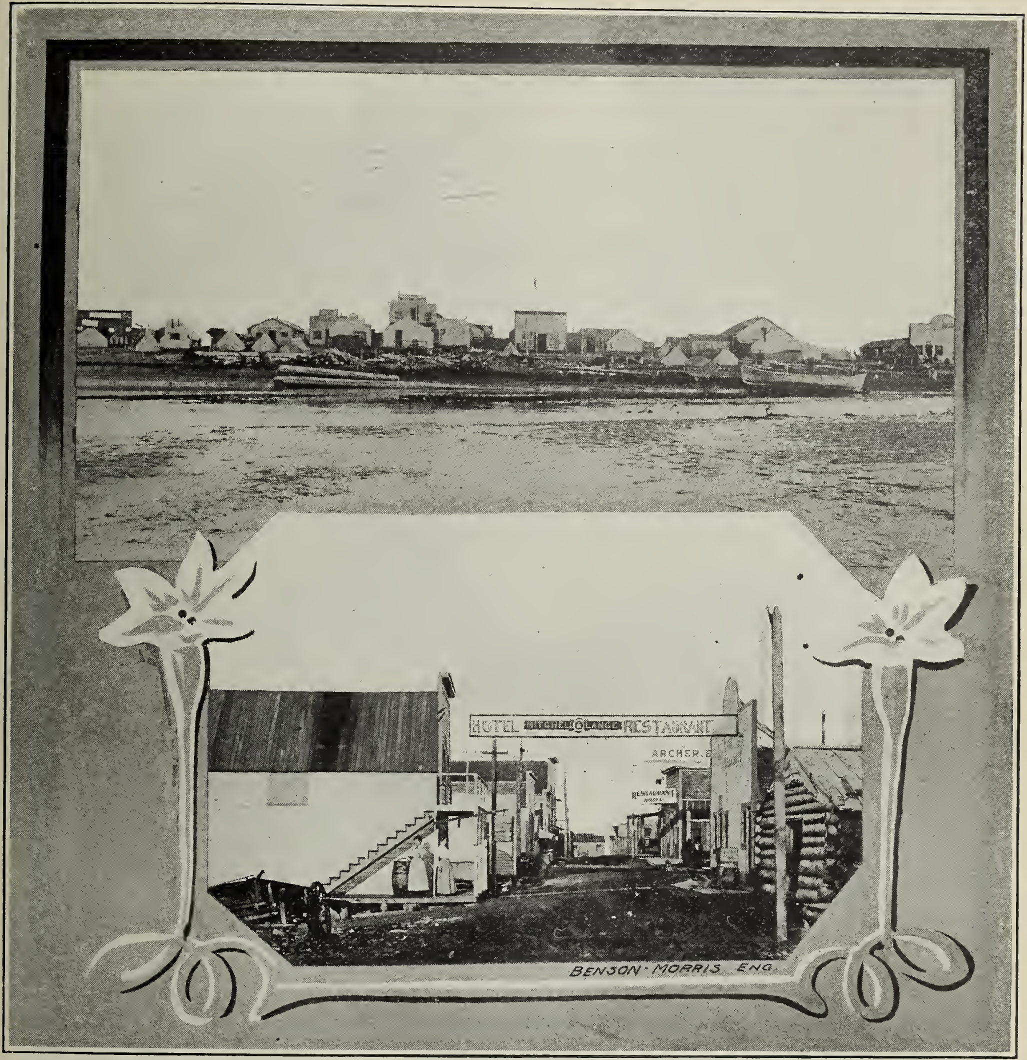
East of the Nome river are a number of streams that carry gold, but like the country of the Sinuk and Cripple Rivers, the values in the gravel necessitate the use of hydraulic or other improved methods of mining. The upper Nome River and the upper Snake River country have been the scene of some mining ever since the first discovery. Rock Creek, a tributary of the Snake River north of Glacier Creek, has produced considerable gold. Boulder Creek and its tributaries, flowing into Snake River from the west, have been mined. In fact most of the region drained by Snake River and Nome River contains values in gold that hydraulic or improved machinery methods may extract at a profit. This fact is recognized by the corporations which are actively at work constructing ditches in this part of the country.

Thirty-five miles east of Nome is the Solomon River. This stream is thirty miles long flowing through a narrow valley in the hills, which broadens as it approaches the tundra, and



Photograph by B. B. Dobbs.

HYDRAULIC ELEVATORS ON GLACIER CREEK.
Operations of the Miocene Ditch Co.



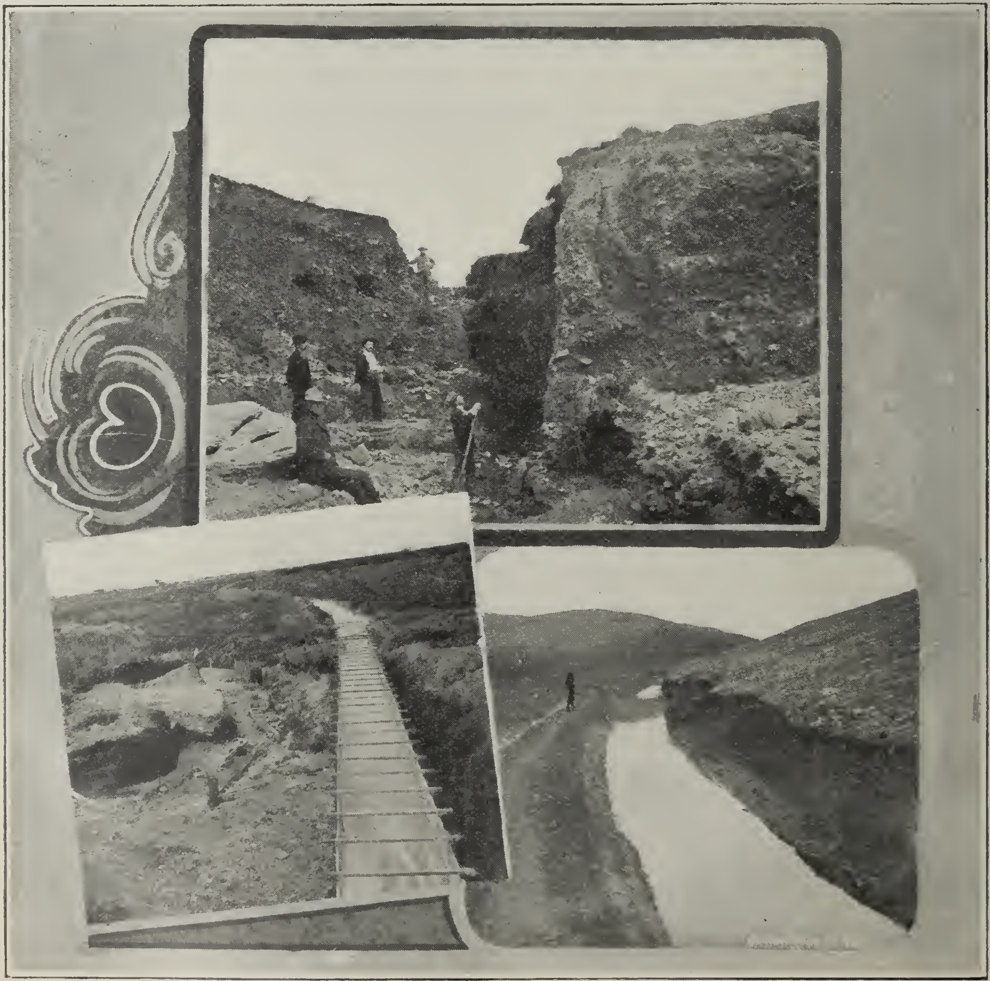
Photograph by B. B. Dobbs.

SOLOMON, WATER FRONT AND STREET VIEWS.

through four or five miles of tundra before it debouches into Bering Sea. The towns of Solomon and Dickson are on either side of Solomon River at its mouth. Dickson is the seaboard terminal of the Council City and Solomon River Railroad. Before leaving Alaska, and late in the season of 1904, I visited this part of the peninsula, and was surprised at the extensive preparations being made for mining on a large scale. Three large ditches were partially constructed, hydraulic lifts were installed and in operation, and from the mouth of Solomon River to East Fork, a distance of sixteen miles, active mining operations were under way. The pay-streak in Solomon River is broad and in places is very rich. That which impressed me most here as elsewhere was the extent of the gravels in which gold is found. A dredger had been successfully operated in the stream, pay had been found in the benches, and the broad flat valley through which this stream flows after leaving the foot hills contains gold.

Some of the tributaries of Solomon River are streams of considerable importance, notably Shovel Creek, where several mines are in operation. I believe that gold has been found in every tributary of Solomon River from the mouth of the stream to East Fork, and when the ditches planned for this section of the country are completed, when the dredgers in process of construction are installed, and the hydraulic elevators are in operation, the output will be as surprising to many residents of this part of the Northland as it will be pleasing to the enterprising citizens who are now investing many thousands of dollars in ditches and improved mining machinery to be used in this region.

The railroad from Dickson up the Solomon River and across to Council City, con-



Photograph by B. B. Dobbs.

HYDRAULIC MINING AT BLUFF.
Gravel Bank. Flume and Ditch of Topkuk Ditch Co.

structed and in operation as far as East Fork last season, will accelerate the development of this part of the peninsula. Solomon is already a thriving town, third in size and importance of the towns of Seward Peninsula, and Dickson is a thriving village where the railroad has its headquarters and its shops. The extent of mining operations in this section is indicated by the volume of business which it is necessary to transact to maintain towns or bases of supplies as large as Solomon and Dickson.

Some notable discoveries of quartz veins have been made in the Solomon River region. Hurrah Quartz mine dropping twenty stamps and yielding a nice monthly revenue to its owner, is on Hurrah Creek one of the tributaries of Solomon River. There are other quartz prospects in this vicinity that look very encouraging. A description of this quartz mine and of other prospects will be found under the caption of "Quartz" on other pages of this volume.

Photograph by B. B. Dobbs.

THE BEACH AT BLUFF.

Southeasterly from the Solomon River country, a distance of about twenty miles, is the famous Topkuk region in which is Daniels Creek, one of the richest streams in Northwestern Alaska. The formation here possesses the peculiarity of an immense basin of gravel in a limestone bedrock. Very rich beach diggings were found here in 1900, through which Daniels Creek flows. The stream is very short not being more than a mile in length, but the values that are found in these gravels are remarkably rich. A ditch has been constructed bringing water from Kutcheblok twenty-two miles distant to these mines, and last season was the beginning of operations in this locality by hydraulic mehods. Between the Topkuk region and Solomon River are several streams in which gold has been discovered.

From Bluff at the mouth of Daniels Creek to Sinuk River the distance is ninety-five miles, Nome being forty miles east of Sinuk and fifty-five miles west of Bluff. I have noted that the water-shed of this area extends back from the coast about thirty miles, and from the descriptions I have endeavored to give it will be seen that a very large area of this territory contains valuable deposits of gold placers. Nearly all of this 3,000 square miles or more is mineralized and much of it will be worked. The grandchildren of the present generation may own valuable mines in this section of Seward Peninsula.

Thos. Reed is the United States Commissioner and Recorder of the Nome District. The recording office is at Nome.

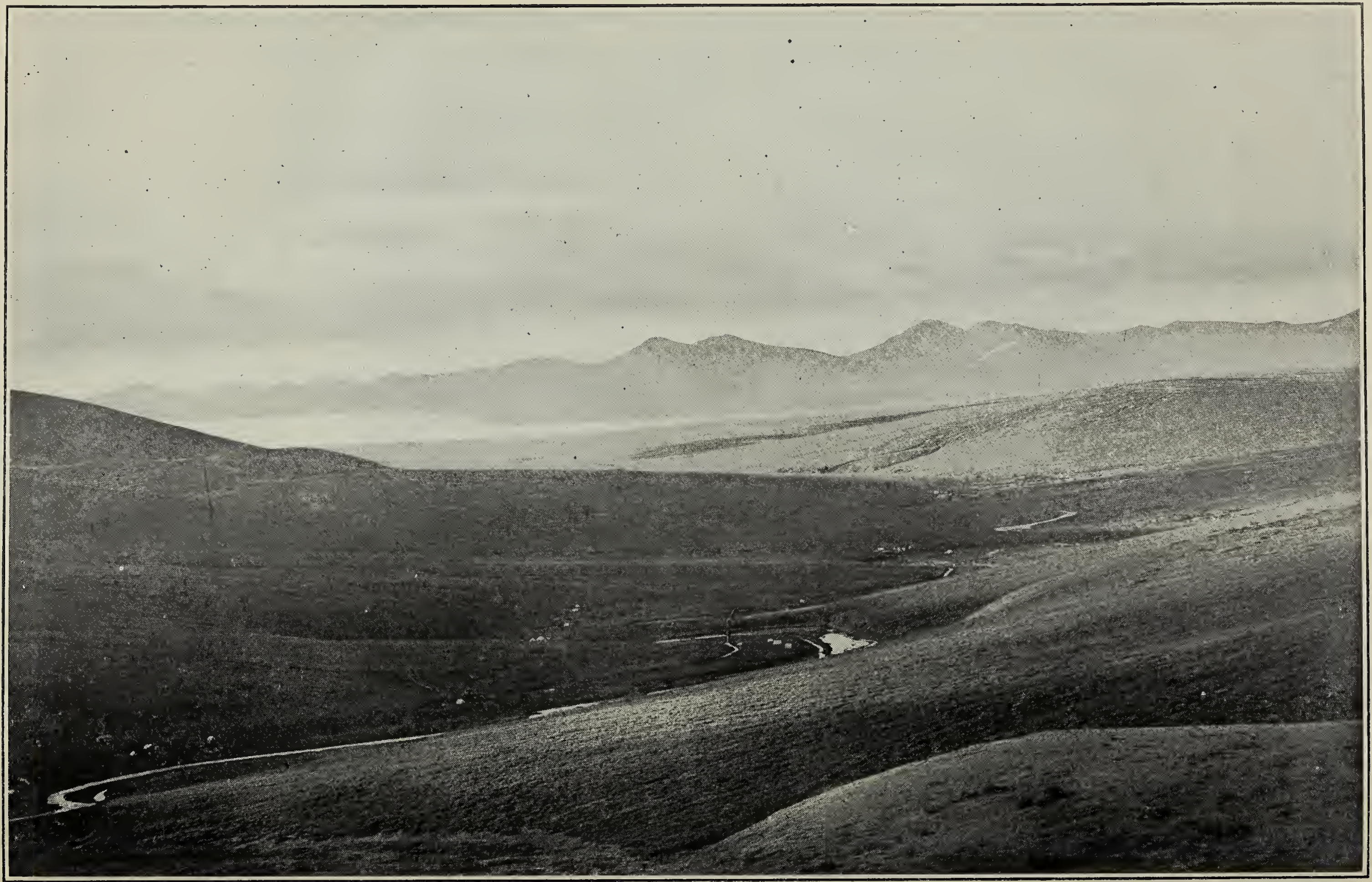
THE COUNCIL DISTRICT.

Photograph by B. B. Dobbs.

THE SPHINX OF OPHIR CREEK.

The Council City country has the distinction of being the pioneer mining district of Seward Peninsula. Gold was first discovered here by Daniel P. Libby, Louis Melsing, Harry L. Blake and A. P. Mordaunt. The Council District was organized before the strike was made on Anvil. Mr. Libby was a member of the Western Union Telegraph Company's expedition in Alaska in 1865-6 at the time when that company was attempting to construct a telegraph line across Alaska to be connected by cable across Bering Sea with a Siberian line. The completion of the Atlantic cable and its success caused the company to abandon the work after $3,000,000 had been expended. Mr. Libby spent the winter of '65 and '66 at Grantley Harbor, and in the course of his explorations while connected with the company found colors and likely looking gravel banks in the Fish River country. For a long time he cherished the desire to return to this region on a prospecting trip. The great Klondike strike of '97 intensified this desire and he secured the assistance necessary to equip himself with a three-year outfit. He arrived at Golovin Bay in the summer of 1898 and proceeded up Fish River to Ophir Creek, now one of the most famous streams of the peninsula, and made a discovery of gold. He and his companions established the town of Council and built the first white man's residence in the town patterning it after the Eskimo igloo. He was prospecting in this vicinity when the Anvil strike was made.

Council District is unlike the Nome country in that it is forested. In the entire Nome District there is not a tree, nor a shrub other than willow. In the Council District there is plenty of spruce timber for domestic use. The mines of Ophir Creek are among the most valuable in Northwestern Alaska. There are places where the pay-streak is 700 feet wide, and the gravel deposit twenty feet deep. Ophir Creek and its tributaries have produced a



Photograph by Kinney.

OPHIR CREEK, COUNCIL DISTRICT. One Claim on this Stream has Yielded Three Tons of Gold.

total of about $4,500,000 of gold. Although this creek contains very rich mineral deposits mining operations by crude methods were not successful. The early conditions with which the miner had to cope made it impossible for him to conduct his business so as to obtain the profits that should come from ground containing such high values. He found it necessary to dig ditches so as to provide water supply, to use machinery and entail expenses not within the means of the ordinary prospector. The first operations on Ophir Creek were not profitable and claims containing vast values were sold at moderate prices. Most of this creek is owned by the Wild Goose Mining and Trading Co. This company acquired the property by purchase paying a large sum for it. But the company has extracted from one mine, No. 15 Ophir, a sum more than twice as large as it paid for its entire holdings on the creek. The company has constructed near forty miles of ditches to bring water with which to wash the gravels of its Ophir Creek property. The main ditch is the largest in Seward Peninsula and is big enough to float a small river steamboat.

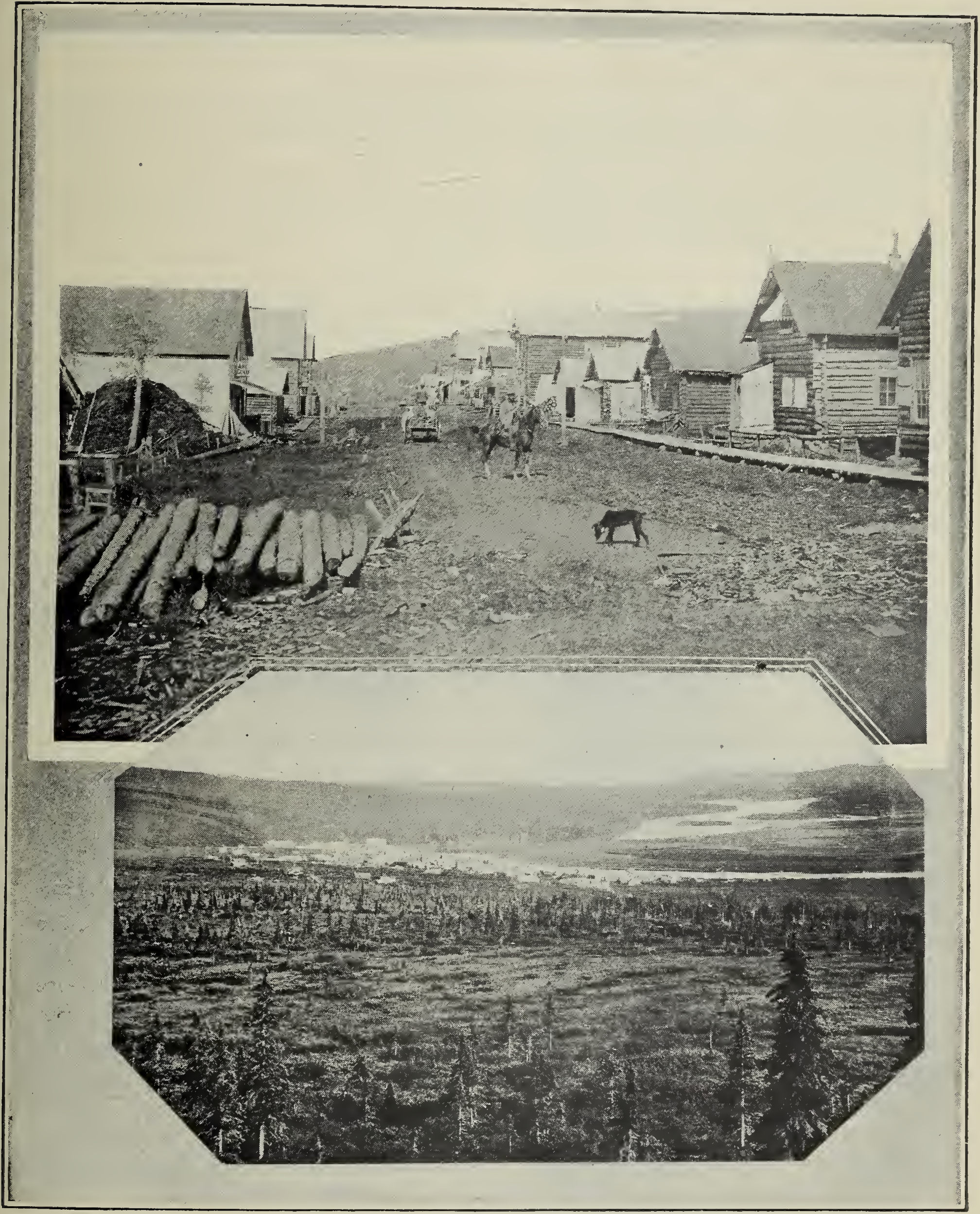
Besides Ophir Creek the other gold bearing streams of this region are Dutch, Snowball, Albion, Crooked, Sweetcake, Warm, Elkhorn, Goldbottom, Richter, Neukluk, Melsing, Mystery, Oxide, I & L, Big Four, Willow, Ruby, Goose, Quartz, Canyon, Boulder, Dixon, Dry, Damson, Banner, Johnson, Sunshine, Curtiss, Kingsley and Camp. So far as has been discovered Ophir Creek has the distinction of having the largest pay streak of any stream in Alaska. J. M. McDowell is the Commissioner at Council.

THE KOUGAROK DISTRICT.

The Kougarok is the great interior mining district of Seward Peninsula. Discoveries were first made here in the spring of 1900, but the country has been only partially prospected, and has not been developed to any extent because of its great distance from base of supplies and the dufficulty and expense of transportation. But there have been prospectors and miners who had faith in this country, and they have paid hundreds of dollars the ton for food, most of the expense being for transportation, and have stayed by the country, some of them winter and summer, working patiently until now the developments warrant the construction of extensive ditches. Plans for these ditches have been completed this winter. The Kougarok River is a large stream with many gold bearing tributaries. The richest pay has been found on Dahl Creek. Two hundred and twenty-five dollars the pan has been taken from No. 2 Dahl. It was picked out of frozen ground.

Gold has been found in the Kougarok River for a distance of twenty-five miles. It has been found in the streams which flow into the Kougarok from either side, and also in the benches. In order to give a definite idea of the size of this gold bearing area, it may be estimated at twenty-five miles long and fifteen miles wide. The names of the streams where prospects have been found, and in many cases good pay, are Dahl, Quartz, Neva, Dan, Galvin, Coarse Gold, Arizona, Artic, Henry, Homestake, Taylor and its tributaries, Windy, Kougarok, including the left fork and the north fork, Madison Gulch, Dreamy Gulch and Twobit Gulch. Gravel has been found in this region in the highest mountain of the country. On some streams tin also has been discovered.

The principal work has been done on Dahl Creek by Jerry Galvin, Grif Yarnell and others. T. T. Lane has done much development work in this region and demonstrated to his satisfaction that the country carries good values. Next summer he will finish the work of constructing ditches begun in 1904, for the operation of his extensive holdings in this

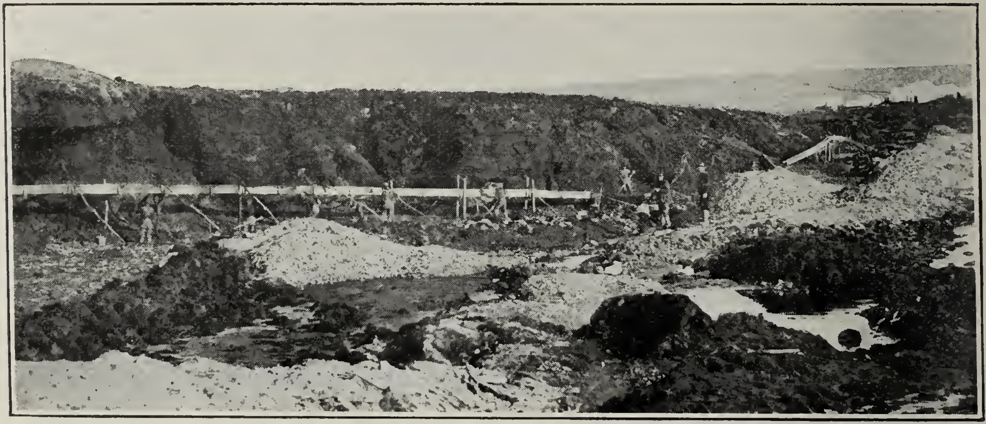


Photograph by B. B. Dobbs. COUNCIL CITY.

district. If he is not the first, he is one of the first miners to demonstrate the value of the benches in the Kougarok District.

There is every indication at this writing that Kougarok region will be a scene of great activity the coming summer. Not only are there big ditch enterprises planned for this region, but it is among the probabilities that a railroad line from Nome will enter this part of the country soon. It may be two or three years before the country attains prominence as a gold-producing region of Seward Peninsula, but there is no doubt of it attaining prominence when transportation has been made easy and comparatively cheap by means of a railroad, and the necessary ditches have been constructed so that the gravels of this area can be washed economically.

Lars Gunderson is the United States Commissioner and Recorder of the Kougarok District. The recording office is at Mary's Igloo.



GALVIN & YARNELL'S PROPERTY ON DAHL CREEK, KOUGAROK DISTRICT.

PORT CLARENCE DISTRICT.

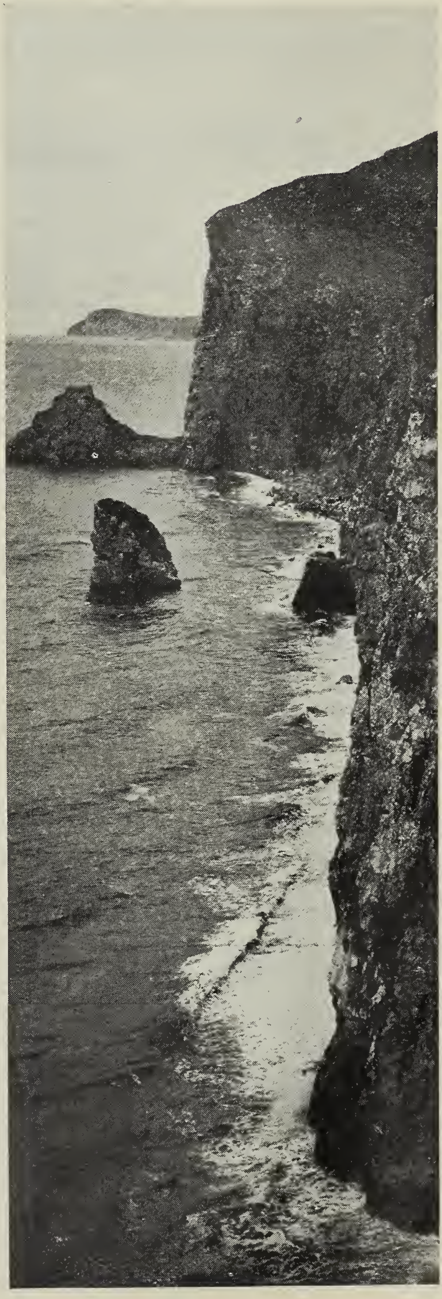
The Port Clarence District is the largest of all the mining districts of Seward Peninsula, including the former districts of Port Clarence, Blue Stone, Agiapuk, York and Good Hope. The recording office of this district is at Teller, and S. C. Henton is the United States Commissioner and Recorder of the district. The York tin region and the Cape Prince of Wales tin ledges are in this district.

What is known as the Gold Run or Blue Stone country, a part of the Port Clarence district, gave promise in 1900 of being one of the richest parts of Seward Peninsula. But the diggings were found to be "spotted," and the subsequent developments were disappointing to many. Th gold found was coarse and many nuggets were discovered. At the mouth of Alder Creek $20,000 was taken from the gravel in one setting of sluice-boxes. Coarse gold has been found in the benches. The great desideratum here is water. With the miners of this region it has either been a "feast or a famine." When the rains came the streams grew into torrents and dams were washed away. In the early part of the season there was not sufficient water for mining operations. When water is utilized by means of ditches and made available for all parts of the open season, this region will produce its quota of gold.

Across the harbor from Teller, Max R. Hirschberg, manager of the Arctic Mining and Trading Company, has constructed an extensive ditch, bringing water from the Agiapuk to work the gravels of Sunset Creek and has planned extensive mining operations to begin in the season of 1905.

That part of the Port Clarence Precinct formerly known as the Good Hope Mining District comprises an extensive area bounded on the north by the Arctic Ocean and lying to the westward of Kotzebue Sound. The main river of this region is the Serpentine which discharges its waters into Shismareff Inlet. While comparatively little prospecting has been done in this part of the country gold has been found on tributaries of the Serpentine River. The streams in which gold in paying quantities has been discovered are Dick, Bryan, Eldorado, Hogum and Reindeer Creeks. Dick Creek is a tributary of Bryan, the latter flowing into the Serpentine River. It promises to develop into one of the very rich creeks of the peninsula. Gold was discovered on this stream in 1901, and since that date not more than twenty men have prospected in this part of the country. Dick Creek is five miles long, and the pay has been located its entire length. No work of any consequence has been done because of the lack of water, but prospect holes that have been dug on a number of claims indicate that the pay-streak is from twenty-five feet to sixty feet wide, and it may have an extreme width much greater than this. The pav gravel on the lower part of Dick Creek is eight feet in depth and yields an average of about five cents the pan. Out of a hole fifteen feet square on No. 1 above Discovery $278 worth of dust was taken, and the workmen did not get within a foot of bed rock on account of water. Extensive operations are planned for Dick Creek this season by a company with adequate capital for the development of the rich placer deposits in this stream.

In order to operate this property successfully it is necessary to construct a ditch line several miles in length. The available water in Dick Creek furnishes a supply for sluicing a few hours only a day during the most favorable part of the season.



THE SHORE LINE NEAR BLUFF.

THE FAIRHAVEN DISTRICT.

The Fairhaven Mining District comprises an area on the Arctic Slope of 150 miles parallel with the coast of Good Hope Bay and a distance back into the interior of the country from the coast averaging fifty miles. This vast area is as yet only partially prospected. Up to the close of navigation in the year 1904, this district had produced a total amount of gold dust valued at about $700,000. The streams that have produced gold are Candle Creek, Inmachuk River, Old Glory Creek, Hannum Creek, Rex Creek, Humboldt Creek, Native Gulch, Bear Creek and the beach diggings at the mouth of Native Creek. Comparatively little work is done on these streams in the summer season and they are known as winter diggings. The output of Candle Creek during the winter of 1903-4 was about $70,000, and an estimate made last fall placed the product of this stream for the winter of 1904-5 at $100,000.

Miner's Cabin, Inmachuk River.

Thawer on the Inmachuk.

The Inmachuk River is the most promising stream of the Fairhaven District. The output of the mines on this stream has been about $200,000, most of it coming from dumps taken out during the winter by means of thawers. The gold of the Inmachuk is black. The limit of the Inmachuk pay-streak has not been determined, but it is known to have as great a width as 130 feet. The average depth to bed rock is sixteen feet, and the pay is found in a stratum of gravel having a depth of from two feet and a half to seven feet. This pay-streak has been prospected a distance of ten miles on this stream. Pans of gravel yielding as much as twenty-five dollars the pan have been taken from Inmachuk. Reports of $70 pans from Inmachuk River during this winter, 1904-05, have been received. The average pay of the best gravel is estimated at from twenty cents to thirty cents the pan. The indications are favorable for an immense deposit of pay gravel in this stream. This gravel lacks the depth of the auriferous deposit of Ophir Creek, but when the mines of this river are developed to the best advantage the product may place Inmachuk River in the category of the richest gold bearing streams of Seward Peninsula.

The principal work on this stream has been done in the Dashley group of claims, the Polar Bear group and property owned by John De Fries. Gold was discovered on this stream in 1901, by John De Buhr and his associates. Among the pioneers of this district are: John De Buhr, William Fee, (Missouri Bill) William Davis, Fred Sandstrom, Z. E.

Foster, Pat Maloney, Jack McCartney, R. L. Howie, J. M. Clark, J. M. McCormick, J. R. Todd, Henry Feldmen, Frank Sullivan, D. Clough, Jess Pinnell, Jack Fuller and Red Miller. The first Commissioner of the district was T. C. Noyes. He was succeeded by W. J. Milroy, who was followed by C. S. Aldrich. The present Commissioner is Alfred S. Kepner, with headquarters at Candle City.

Inmachuk River is thirty miles long. It is a sinuous stream flowing through a narrow valley which broadens to a width of about four miles near the mouth of the river. Numerous tributries of Inmachuk River are gold bearing, notably Old Glory and Hannum Creek. From one claim on Old Glory $24,000 was taken out in one season. Very little work has been done in the benches of this stream, as the ground is frozen solid, requiring the use of thawers to sink prospect holes. The need of this country is available water, and this can be supplied by constructing a ditch from Lake Imuruk which is twenty miles distant and at an altitude of 800 feet above the sea. This lake will furnish an inexhaustible supply of water, and a ditch from it will hasten the development of this part of the Arctic Slope. Surveys for the ditch have been completed, and the work has been planned.

Candle Creek is a tributary of the Kewalik River. Gold was discovered on this stream late in the season of 1901. The discovery had every appearance of a phenomenal strike, as extraordinary values were taken out of the bed of the stream. But since the exhaustion of the values in this easily accessible ground the camp has not prospered so well, although it has produced considerable gold every year. Here, as on the Inmachuk River, water under pressure may be the means of developing some very rich ground in the benches.

Between Candle Creek and Inmachuk River is the Kugruk River. This region was first noted for its coal deposits. A vein of coal more than 100 feet wide has been discovered on Chicago Creek, a tributary of this stream. This coal mine is operated by the McIntosh Brothers and their associates, and supplies fuel to the miners on Candle Creek and Inmachuk River. During the winter of 1903-4 gold was found on the Kugruk in quan-

GROUP OF INMACHUK MINERS.

tities that make it a promising strike, and profitable mining was done that winter by means of thawers.

This part of Seward Peninsula is not easy of access. Supplies must be shipped in from Nome by means of coast steamers, through Bering Strait to the Arctic Ocean and to Kotzebue Sound where the cargoes are discharged. From the place of debarkation supplies must be poled up stream in boats, or hauled by freight teams. The great cost of keeping horses in this remote region makes freighting very expensive, and the work of poling or towing a boat up stream is extremely laborious. Considering the conditions, the difficulty and expense of getting supplies into this part of the country, the wonder is that so much work has been accomplished.

THE REGION OF THE KOBUK.

There is another part of Kotzebue Sound country which is very promising. During the past two years a few miners have been prospecting on the Kobuk River and in 1903 a strike which promised to be of magnitude was made on the Shungnak, a tributary of the Kobuk. It attracted a few venturesome spirits and since that date there probably have been one hundred prospectors in this far-away part of the Northland. Gold has since been found on several streams besides the Shungnak. The Kobuk is a large stream four hundred miles in length, having its sources in the range of mountains not more than fifty miles from the head waters of the Koyukuk, the latter stream flowing in a southerly direction to the Yukon.

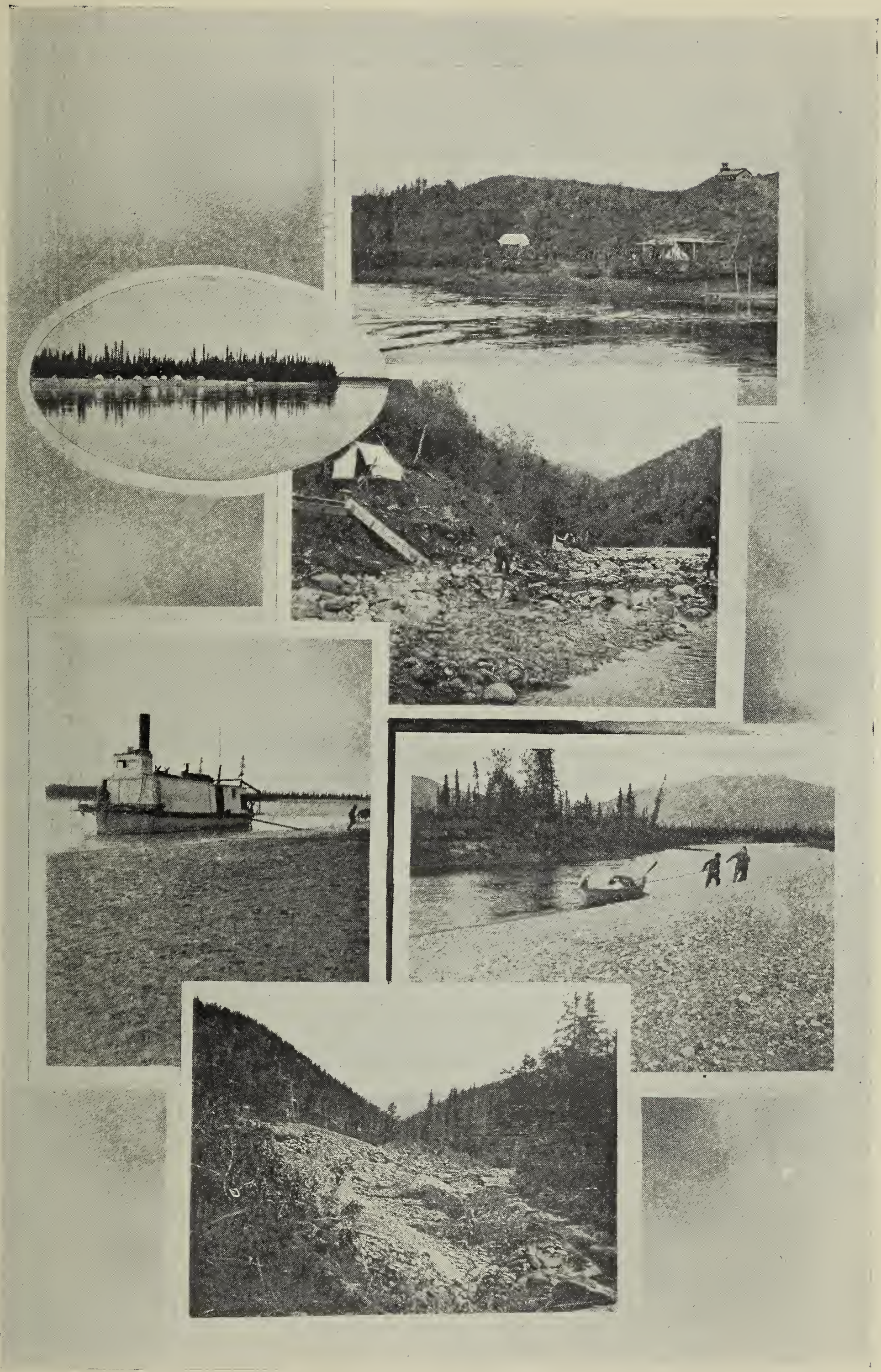
This part of the country possesses some striking and unique feature. The Noatak River, a short distance east of the Kobuk, flows in a parallel direction with it through precipitous mountains, resembling the mountains of Colorado. This is the northern extremity of the Rocky Mountain range. It is well known that these mountains are mineralized, but their great distance from a base of supplies has been a barrier to any except the most superficial prospecting. A great many ledges have been found in this region, and assays indicate phenomenal values. Gold, silver and copper are in this part of the country, very rich specimens of float having been found. From interviews with prospectors who have been in this region I am led to the conclusion that the time will come when very valuable quartz mines will be located and developed here.

There are also excellent quartz prospects on the upper Kobuk River. Jade Mountain is near the Kobuk River, and is, I believe, the only place in Alaska where jade is found. The upper Kobuk River country is wooded. It has a growth of timber ample for fuel purposes and for building.

The country is well stocked with game and the rivers abound with fish. Although this is very far north, and the winters are extremely cold, in some respects the conditions are more favorable than they are at Nome. The natural food supply of the country is better, and there is an abundance of timber.

This region is mineralized from Ribbon Creek at the delta of the Kobuk River to the head-waters of Kobuk River and the Noatak, a distance of 350 miles. The width of the country from the Kobuk River to the eastern water-shed of the Noatak is from sixty miles to seventy miles. The area of this mineralized region is about equivalent to the area of Seward Peninsula. Between the Kobuk and the Noatak is an old, well-trodden trail used by the natives and supposed to be an old moose trail.

Many ledges are in the precipitous, rugged mountains drained by the Noatak River.



Photograph by Courtesy of E. O. Lindblom.

SCENES ON KOBUK RIVER.

Shungnak, Most Northerly U. S. Postoffice; Native Camp on Kobuk at Dahl Creek; Placer Mining on Shungnak; Lucky Three Mining Company's Steamer; Freighting Up the Kobuk; Discovery Claim, Dahl Creek.

Most of these ledges that have been discovered are base ore containing gold, silver and copper. A ledge fifty feet wide has been discovered on the Kobuk. The assays of selected samples of this rock have shown as much as eighty-seven per cent. copper. Another assay of rock from this ledge shows thirty-nine per cent. copper and $3.60 the ton in gold.

It was a sample of ore from this part of the country obtained by Captain B. Cogan from the native village of Chesalik on the Noatak that was instrumental in causing the Kotzebue Sound stampede in 1898. Captain Cogan took the ore to the states and had it assayed. The result of the assay was $4,700 the ton. The native who gave the captain the rock told him there was a mountain of it. This alluring sample was ultimately the cause of Captain Cogan's death. He spent several years in this bleak, cold country in a fruitless search for the ledge. The story is pathetic. Suffice it to say here that the ledge never has been discovered, and miners of Northwestern Alaska are inclined to class this story with the story of the "Lost Cabin Mine," and the story of other rich finds which have been lost and could not be re-discovered. There is no question, however, of the value of the piece of quartz given to Captain Cogan by the native, but where the native got the quartz still remains a mystery.

FROM THE NOATAK TO THE BOUNDARY LINE.

The country lying between the Noatak River and the Canadian boundary line is vast in extent and almost unknown. The Colville River flows through a basin in which coal and petroleum exist—to what extent remains for future prospectors to discover and future generations to develop. The Nome country, and the part of Alaska contiguous thereto, has work to be done that will not be consummated within the next century and it will be a long time before the resources in the extreme north are explored.

The Colville is a big river several hundred yards in width and fed by numerous tributaries. The current is strong, flowing in the upper part of the stream at the rate of six miles an hour. The mouth of the Colville River is like the mouth of many Alaska streams. The waters find their way to the sea over a wide reach of flats where stranded icebergs glisten in the summer sun and are snow-covered hummocks in the winter season. It is impossible for a vessel of any size to get into the river from the ocean. Inside the bar the stream is navigable for the largest river vessels.

The valley of the Colville is composed of low barren hills. This valley is fifty miles to 100 miles wide, extending from the rugged mountains of the Noatak to the summit of the easterly water-shed. The tributaries of the Colville have cut through and exposed many veins of coal. Prospectors from this region have told me that they have been able to make camp fires with the float coal they have found in most of the streams where they have prospected.

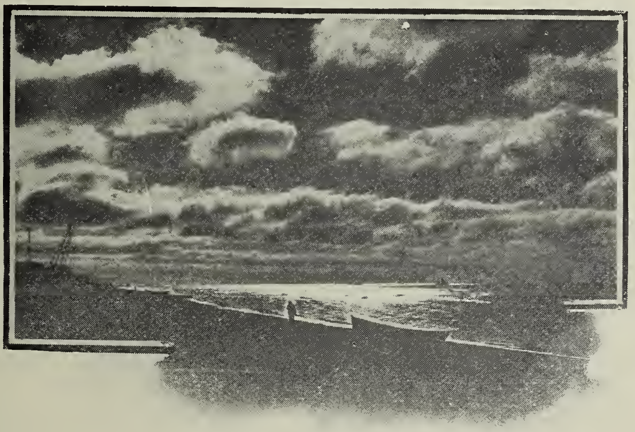
Between the Colville and the boundary line are several rivers which have been recently put on the map of the United States. Five of these rivers were discovered by a prospector, S. J. Marsh, who was in this country in 1901-2 One of these streams is 300 miles long. All this country is devoid of timber and is covered with moss. Beneath this vegetation the ground never thaws. Mr. Marsh says it is not a mineralized country, but is a limestone formation, and geologically is a recent uplift.

South of the country which has been previously described, is a large area of Alaska

VIEW OF FISH RIVER.

from which the waters drain into the Yukon. The Koyukuk River is one of the streams of this region. Several enterprising mining camps are established on the Koyukuk, and gold was mined in this part of Northwestern Alaska before the discovery of the Nome country. The Chandlar and other streams are great water ways that contribute to the floods of the mighty Yukon. But in all this immense region there are only a handful of white men and most of them are in the camps of the Koyukuk.

The area of Alaska north of the Yukon is near 200,000 square miles, and the white population of this immense country does not exceed 10,000. There is one man to every twenty square miles of territory. Most of these people are gathered in mining camps and towns of which Nome is the largest. It is apparent from this fact that there are hundreds of square miles of territory where there are no white men and where there never has been a white man. An army of 100,000 prospectors would not be able to explore all this vast region in half a century. The little vanguard that is up there now blazing trails cannot accomplish much. But the discoveries that have been made and the discoveries that will be made will be an incentive for others to join the ranks, and the time will come when there will be a great industrial army in Northwestern Alaska developing the wonderful mineral resources of a country which a few years ago was regarded as drear and desolate.



CLOUDS HANG LOW O'ER BERING SEA.

THE NORTON SOUND MINES.

On the other side of Norton Sound from Seward Peninsula placer mines have been discovered and successfully operated. The principal work has been done on Bonanza Creek without other facilities than sluice-boxes and men with shovels. This creek has produced probably $200,000. This stream lies between the Yukon and Norton Sound.

Gold has also been found on streams flowing into the other side of Norton Sound, notably the Tubuktulik and the Kuik Rivers. The peninsula between Norton Sound and Golovin Bay and the country lying to the eastward, although easily accessible, has not been very thoroughly prospected. On this peninsula a few miles west of Norton Sound is a well defined contact of granite and shale. Some prospects have been found in the vicinity of this contact, but pay has not been developed. This is a likely looking country for quartz. A number of ledges have been found, but as yet sufficient development work has not been done to ascertain their values. There are also deposits of coal in the Norton Sound country.

ST. MICHAEL PRECINCT.

St. Michael is one of the oldest stations in Northwestern Alaska. It was established by the Russian-American Company in 1837. It is at the mouth of the Yukon, and is the place where all goods consigned to Yukon River points are trans-shipped. The town consists only of the stores and warehouses of two of the large Alaskan commercial companies, the military post and a few cabins and cottages. There are no mines in operation in St. Michael Precinct.

The development of the upper Yukon River country, especially the work being done in the Tanana diggings, creating a demand for a greater supply of provisions and miscellaneous goods, will quicken the business pulse at St. Michael.

Photograph by B. B. Dobbs.

THERE'S MOONLIGHT ON THE SEA.

THE NOME BEACH.

Nome beach probably was the greatest shallow placers ever discovered. It offered an opportunity for a large number of men to make a small stake quickly. Possibly more valuable shallow diggings have been discovered, but I am not aware if there is another place in the history of gold mining where such satisfactory results were so quickly obtained.

Beach diggings were not struck until well along in the season of 1899. There was a general stampede of unsuccessful miners from the creeks, and of the people who were in the town of Nome. Not less than five hundred men extracted dust to the value of $2,000,000, or an average of $4,000 to the man.

The beach for a distance of forty miles from the easterly part of Nome to Sinuk River carried values, but the best pay was found in the vicinity of Nome, and just west of the city limits. In this locality two men rocking three days have cleaned up as much as $3,800. A story of a wonderful investment illustrates very forcibly the great values of the beach sands at this time. In the spring of 1900 Arthur Baldwin came to Nome from St. Michael. Before leaving St. Michael he was advised to take a rocker with him. He found an Eskimo who had two dilapidated old rockers which he bought for 25 cents a piece; he also brought with him to Nome a small quantity of quicksilver. Soon after his arrival the beach strike was made. Everybody was excited and anxious to get to work in the rich sands, but there was a lack of lumber in town for making even the primitive rocker. Mr. Baldwin could have sold his mining apparatus for a good sum, but he wisely decided to lease the rockers. Four men agreed to pay him a royalty of fifty per cent. of all the gold they took out with his machines, and in thirteen days his royalty amounted to $2,800.

Most of the gold in the beach was found in layers of ruby sand. Ordinarily it was very fine but not scale gold, such as is commonly found in beach sands. The depth to bedrock was from four feet to eight feet, and usually very good pay was found on bedrock.

The average width of the beach from mean low-water mark to the tundra is about 150 feet. This ground was appropriated by miners in small strips, as it was not available for staking under the law that governs placer mining, the ground being washed by the waters of Bering Sea at extreme high water. The sands were worked from the tundra to a point where bedrock was on a level with the water line. At this point the waters of the sea stopped further progress.

In the season of 1900 almost every kind of impracticable mining machine was brought to Nome for the purpose of working the beach. Gasoline engines were used for pumping water out of the sea and into sluice-boxes, where dozens of men would be shoveling-in. This was a sensible method of getting the gold, and a great deal of ground that had been hurriedly worked the season before was re-worked and made to yield a profit. But there were dredgers, some of them on giant wheels which were constructed so that they could travel through the surf of the sea while the dredger dug up the values in the sands beneath the water; and there were devices in endless variety for saving gold. The dredgers and the other new-fangled apparatus did not work satisfactorily, and there were many blasted hopes as a result of these failures. At the close of this season the beach was strewn with many kinds of mining machinery which had failed to do the work expected.

In 1901 considerable work was done on the beach, and much ground was worked for the third time. A few men of inventive genius attempted to use machinery for extracting the values from the sands beneath the water. Every year since the discovery of gold at

Nome attempts in this line have been made, but as yet none has succeeded. In the winter time miners have made holes through the ice near the shore line and in some instances have succeeded in getting out dumps. These dumps have always yielded good values. There is no question of the value of the unworked sands beneath low water of this beach. Prospecting has shown that these values extend into the sea, and in some places quite a distance. I believe it is safe to estimate that a strip twenty-five feet wide and many miles in length beneath the surf line of Bering Sea contains gold values in some places as rich as were the sands of the beach. The only question is the method of extracting them.

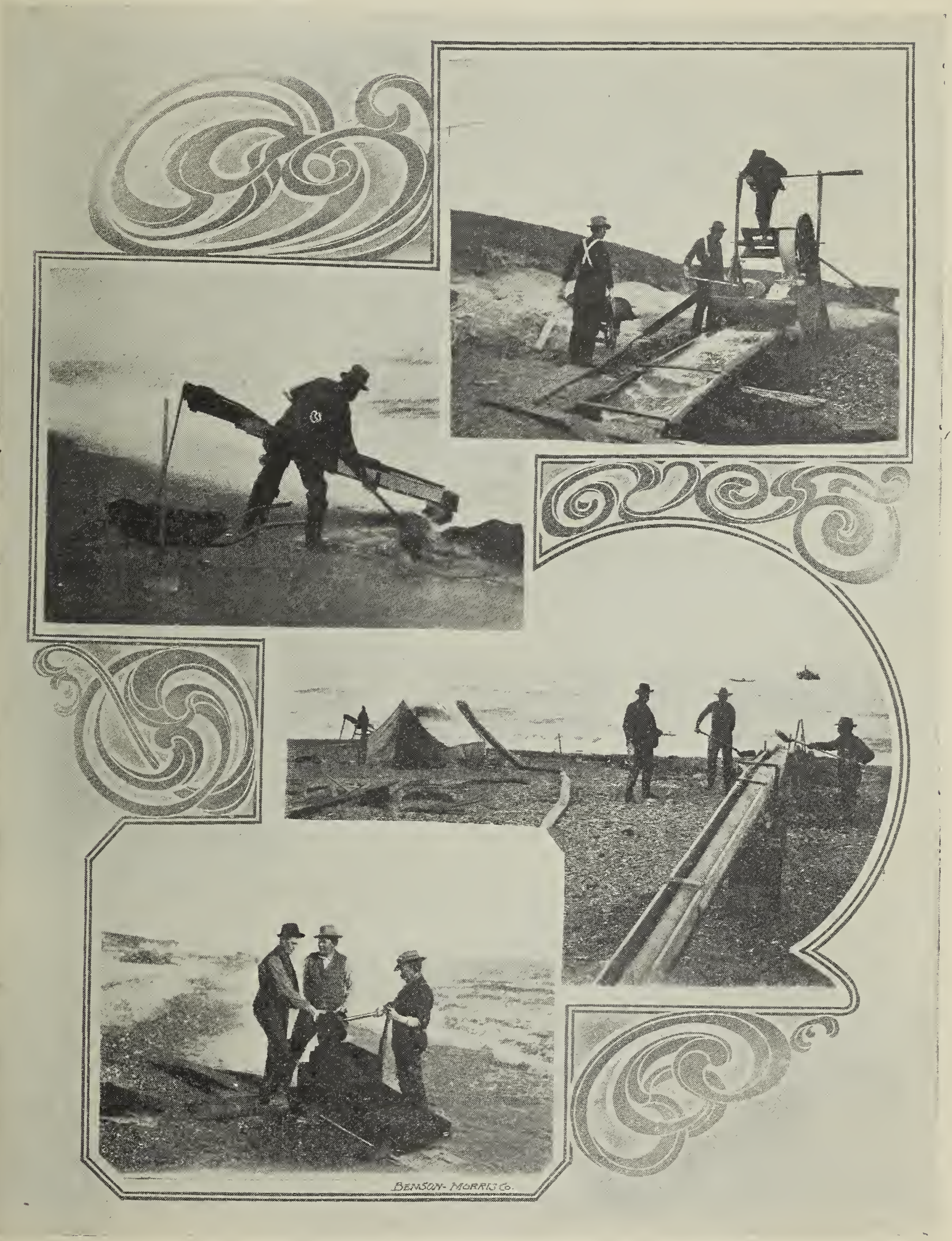
A person unfamiliar with conditions at Nome might think that the problem is easy ot solution. A dredger on the sea could do the work, but one of the furious storms that frequently sweep Bering Sea would make kindling wood and junk of the dredger. An attempt has been made to dig into these sands by means of a stationary engine on the bank and a digging apparatus drawn from the sea by aid of a cable. So far none of the plans has succeeded.

Values still remain in the beach sands. Notwithstanding the frequency with which they have been worked all the gold has not been taken from them. I believe that this entire beach, 150 feet wide, averaging six feet in depth and having a length of many miles, will yield fifty cents the cubic yard. My judgment in this matter is based on the fact that a person can obtain a prospect most anywhere on the beach at Nome. I have known of sands worked for the third or fourth time that have yielded thirty cents the yard. The method by which these sands have been worked makes it possible for a lot of spots of ground to remain untouched. A system of working the beach sands on a very large scale would find these virgin spots, the value of which should make the average yield of the sands at least equal to the estimate I have placed on this ground.

In many places where prospect holes have been sunk in the tundra evidences have been found that this ground was once the bottom of the sea. I have referred elsewhere to an old beach line, lying a quarter of a mile or more back from the present beach, which contains values in a similar deposit to the one in which gold was found in the beach. A strike in one of these ancient beaches, made during the winter of 1905, has created excitement in Nome, and a correspondent writes me that in one place sixty-two buckets of gravel taken from the tundra near, or within, the city limits yielded gold dust valued at $180.

Photograph by Ernst. ARRIVAL OF THE KOTZEBUE MAIL.

Mail Carrier Eli Smith's Record Trip, 350 Miles in Five Days.


BENSON-MORRIS CO.

MINING THE BEACH.

The Longtom.
The Rocker.

A Novel Pump.
Sluicing.

THE KUSKOKWIM REGION.

The Kuskokwim region is a vast, unknown country. It is in the same judicial division of Alaska that Nome is in, and comprises a mining district known as the Kuskokwim. It is the largest mining district in this judicial division, including all islands of Bering Sea north of the 59th degree of latitude, and all the country south of the Yukon in the second judicial division, probably one-fifth of the entire area of Alaska, comprising a country near twice the size of the State of Washington.

The Kuskokwim is 1,100 miles long and is navigable for river steamers of light draft a distance of 900 miles; steamers have ascended the river to a place 650 miles above its mouth. The country bordering the Kuskokwim from Bethel, 200 miles from its mouth, to the source of the stream is wooded, and a pebbly beach marks the course of the stream, There is not a rapid in this magnificent river. The great Yukon, so wide in many places that one seems to be looking out over a sea when standing on its bank, flows through the Yukon valley carrying vast quantities of detritus which discolor the waters so that they resemble the streams of the Middle West. The Kuskokwim is a striking contrast in appearance to the Yukon. Its waters, except in case of flood and freshet, are as clear as crystal through which the rocks and pebbles of the bottom of the river, and the myriad fishes that live in these waters, are plainly seen. The source of the Kuskokwim is near the base of Mt. McKinley. Mt. Foraker, another peak of great altitude, but not so massive as McKinley, is in this vicinity. The natives call these mountains man and wife.

To the south the Kuskokwim water-shed has a maximum width of 200 miles and is drained by numerous unknown streams. To the north the water-shed area is not so extensive, being less than 100 miles wide. In one place there is a portage between the Yukon and the Koskokwim of only sixty-five miles. This portage is frequently traversed with boats as it is almost an endless succession of lakes. This country is marshy and flat, is covered with moss, and may be properly designated as tundra. There are no trees, nor shrubs other than willow, on the lower part of the water-shed of the Koskokwim.

The forests on the southerly water-shed are composed of spruce, birch, cottonwood and poplar trees. Some of the spruce trees are large, measuring as much as four feet in diameter. The largest growth of timber is near the head-waters of the river where the valley on the south side narrows to a comparatively small width.

The rocks of this region are granite, limestone, slate and metaphoric. The minerals that have been discovered are gold, silver, copper and cinnabar. No mines have as yet been developed. But a vast deposit of cinnabar ore has been located on the Kuskokwim three miles below Kolmakof. Twenty years ago a man by the name of Sipary, who conducted a trading post at Kolmakof, located this deposit of mineral and did some work. He shipped several tons of ore outside to a smelter, but receiving returns of only $11 the ton, he abandoned the property. This deposit was re-located by D. McDonnell in 1901. He sent some of the rock to Stanford University and got an assay of $341 the ton; subsequently he got an assay from rock taken from the old dump of $720 the ton. The lowest assay that he received from any of the ore shipped outside was $20 the ton.

This mineral deposit is exposed in an immense bluff 3,500 feet long and 250 feet high, the waters of the Kuskokwim flowing at its base. The locations on it extend back 1,500 feet. The cinnabar occurs in sandstone, red stringers of which, from a few inches to five feet and six feet in width, may be seen in the bluff. A bond was taken on this property by

Eastern capitalists last season. The expert pronounced it the greatest cinnabar deposit he had ever seen.

On the upper river a galena ledge has been discovered and located. Samples of ore from this ledge are specimens of pure galena. The quartz prospects of this country are very encouraging. Gold placers have been found, but as yet no work other than prospecting has been done. Graphite has also been discovered in this part of Alaska. In all this vast region there are not more than fifty white men, so it is obvious that the country has been but little prospected. There are hundreds of square miles of this vast and magnificent territory where white men never have been.

This region is twenty degrees warmer in the winter than the valley of the Yukon, and besides the mining prospects, both quartz and placer, it has possibilities as a farm and stock raising country. Great strips of country on the south side are covered in the summer season with succulent grasses, growing waist high and forming extensive meadows.

The Kuskokwim valley is inhabited by Thlinket Indians. They are peaceable and good-hearted natives, in character very much resembling the Eskimo. While most of this country is still a wilderness, it was the site of early missionary work in Alaska. A trading post was established by the Russians in the Kuskokwim valley in 1835. This old trading post is still in existence and is conducted by Ed. Lind, a pioneer of this country. It is known as Kolmakof and is 300 miles from the mouth of the Kuskokwim. There is a Russian mission, a Catholic mission and a Moravian mission on the Kuskokwim, and a number of native villages designated by such unpronounceable names as Chuppelgamute, Owhagamute and Obigemute. The native population of the valley has been estimated at between 1,000 and 1,500. There are only a few natives on the upper Kuskokwim.

The stream teems with fish of many varieties, including king salmon, big fellows, some of them weighing as much as ninety pounds, many varieties of trout, including brook, dolly varden and rainbow; grayling, and several kinds of white fish, some of which attain to the size of fifty pounds, and resemble in appearance and delicacy of flavor the Lake Superior white fish. The native name of these fish is chee. During the spawning season the stream is nearly choked with millions of silver and red salmon. A palatable sardine is caught in the waters of the Kuskokwim.

This is a wonderful game country. On the upper Koskokwim there are 400 lineal miles of wilderness, and near Mt. McKinley and Mt. Foraker the country is very rugged and precipitous. This is the home of the mountain sheep, where they may be found in bands of hundreds. Great herds of caribou live in this wilderness unmolested by native hunter or white sportsman. Their only enemies are the carnivorous animals that have their lairs in these mountains, and prey upon any kind of flesh they can capture. The moose is here in all his glory. There are many kinds of bears, from the small black variety to the large ferocious silvertip. There are beavers, martens, wolves that hunt in packs, and foxes of many kinds, each kind possessing a different color of coat. There are ptarmigan flocks that contain thousands, spruce grouse, pheasants, and in season a great variety of water fowl.

Mr. McDonnell, who was the first United States Commissioner appointed by the District Court at Nome for the Kuskokwim District, reports that when he first entered this wilderness he and his party killed twenty-eight moose within a month without going more than five miles from camp. They might have killed more, but this was an ample supply of meat for their winter use. Mr. McDonnell also says that he has seen prairie chickens near the head-waters of the Kuskokwim. He spent much of his life on the prairies of the west and avers that he cannot be mistaken. He is corroborated by Mr. Hendrix, of Belt & Hendrix, who established the town of Chenoa. Mr. Hendrix reports prairie chickens in the Tanana country.

The lowest temperature recorded in Kuskokwim valley is 43 degrees below zero. Ordinary winter climate is not colder than the climate of many of the Northern states. The ice in the Kuskokwim Bay goes out in March, two months earlier than the ice breaks in the Yukon. The soil on the southerly water-shed of the Kuskokwim is fertile and frozen only during the winter time. It does not resemble the barren brown tundri which form the coastal plains in the extreme north of Alaska. It is a rich loam with a sandy sub-stratum. At the missions in the valley, there are splendid gardens. Excellent vegetables are grown in the valley of the Yukon, but the native conditions for cultivation are not favorable as they are in Kuskokwim valley, where vast areas may be adapted to agriculture.

From what I have learned of this unexplored, remote region, I have great faith in its mineral resources. What is needed here, as elsewhere in Alaska, are facilities for transportation. At the present time most of this stupendously great, marvelously magnificent and wondrously wild country, possessing prodigious possibilities, is as absolutely unknown as "Darkest Africa."

Photograph by B. B. Dobbs.

PROMINENT MINING MEN OF NOME.

In the front seat, Major L. H. French and Charles D. Lane; in the rear seat Mr. Adams and Jafet Lindeberg; standing, Attorney Albert Fink.

"We've Got the Tin"

TIN is a mineral possessing great economic value because of its scarcity and the increasing demand for it. Until the past few years tin never has been mined in commercial quantities in the United States. A number of tin prospects in the West have attracted attention and capital has been wasted in an attempt to develop these prospects into mines. The failure to discover tin in the well known mineral regions of North America, and the failures that have resulted from the attempts to develop prospects that have been discovered, have made capital wary of investment in tin property. It would seem, however, that the great demand for tin plate in this country would be an incentive to the development of anything that looks like a favorable prospect of a tin mine.

There is strong evidence to support the belief of the existence of tin in Seward Peninsula, not only in commercial quantities, but in quantities sufficiently large to supply the demand of our own country, when the prospects have been thoroughly explored and developed, proper facilities for handling the ore provided, and a smelter established at some convenient place. The United States uses annually about $20,000,000 worth of tin, or two-thirds of the total annual tin product of the world. Most of this tin is obtained from the Straits Settlement, the remainder coming from Ecuador, Bolivia, Australia and the old mines of Cornwall.

Stream tin and tin ore in ledges have been found in the northwestern part of Seward Peninsula. This region has already produced tin in commercial quantities. From the most accurate information to be obtained not less than 130 tons of tin ore concentrates have been shipped from this region. Most of this tin has been mined from placer deposits by sluicing. The tin occurs in the form of an oxide known as cassiterite. The average value of tin concentrates which have been extracted from the Alaska mines and shipped to the states is 65 per cent. tin, or 1,300 pounds of tin in every ton of ore. The value of these shipments may be easily estimated, as tin is worth from twenty-nine cents to thirty cents the pound. The total value of tin ore shipped from Northwestern Alaska is, in round figures, $50,000. But the cost of extracting this ore, shipping it to the states, in several instances to Europe, and the cost of treatment at the smelters has been, in all probability, equivalent to the value of the ore. Smelters in the United States are not equipped for reducing tin ores, and tin mining cannot become a profitable industry in Alaska until there are facilities for treating the ores at home.

Stream tin has been found in several creeks in the York region on Seward Peninsula. It occurs in gravel deposits in the beds of the creeks. It has also been found in the benches. Its presence in this form and in this environment is accounted for by the same theory that accounts for placer gold deposits. The erosion and decomposition of tin ledges have resulted in their values being scattered broadcast in the gravels of streams in the neighborhood where the ledges existed. The stream in the York region where the greatest value in placer tin has been discovered is Buck Creek. The pay-streak in this creek is four miles and a half long. Other creeks in which stream tin has been found are Grouse, Pinguk, Apkoarsook, the lower three miles of Amakobuk, Banner, Bhuner and Beer. These streams are all in this neighborhood, and they have produced most of the tin ore which has been exported.

The discovery of stream tin was first made in 1901. The following year a small quantity of ore, probably a ton, was shipped to the states for a test. In 1903 about thirty tons were shipped out, and in 1904 not less than 100 tons of ore were exported. A great deal more tin ore than this could have been shipped. It has been mined and is in dumps, but the lack of facilities for converting it into coin has prevented greater shipments. Placer tin is washed out of the gravels in very large sluice boxes. These boxs are two feet wide and provided with high iron riffles. Where the ground is very rich it is necessary to clean-up every four hours. Several companies have been at work developing these tin deposits, and I have been furnished with an estimate, by a man who ought to know, of the quantity of placer tin which is in sight. Taking the length of the stream tin pay-streaks, their width, the one on Buck Creek being 450 feet wide, the average depth, which he estimates at six feet, and the average yield, which he estimates at twenty pounds to the cubic yard, he measures a quantity of tin ore valued at $2,000,000.

Photograph by F. H. Nowell.

TELLER, THE TIN REGION IN THE DISTANCE.

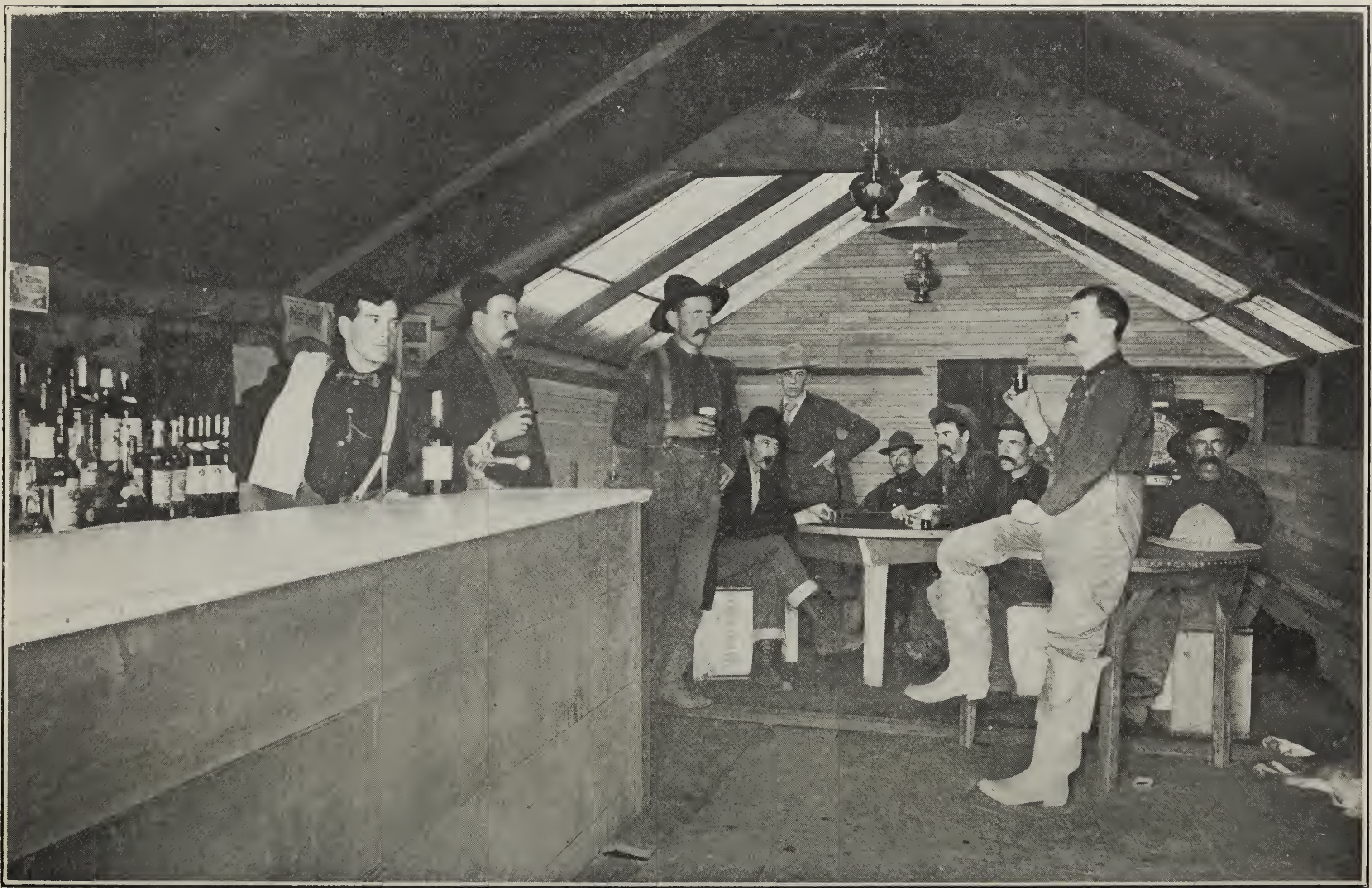
Tin ore in veins has been found in several places in this part of the peninsula; and although comparatively little work has been done on these ledges the prospects of tin from this source already overshadows the stream tin prospects. Tin ore has been found in place on Cassiterite Creek, which is a tributary of Lost River, five miles from Bering Sea, and on Brooks Mountain between Cassiterite and Tin Creeks. Tin in place has also been found in Cape Mountain, the great promontory at the extreme northwestern part of North America designated by the name of Cape Prince of Wales. Cape Mountain, which is a granitic formation, is seamed with tin ore veins. W. C. J. Bartels, president of the Bartels Tin Mining Company, has expended a great deal of money in developing the ledges of Cape Mountain. He has an expensive plant equipped with electric drills, and is tunneling the mountain to cross-cut the veins at a considerable depth below the surface. What he has accomplished is most encouraging. I am informed that at the close of the season of 1904 he had more than 300 tons of high grade tin ore in his dump. Cape Mountain appears to be a vast deposit of tin in place, assays from rock taken at random showing values of from one per cent. to eight per cent. tin. Several companies own claims on Cape Mountain, but as yet no development of any consequence has been done except by Mr. Bartels. If the tin deposits of Cape Mountain go down, and they are in the right formation for continuity, there is enough tin in this mountain to supply the United States for many years. But an accurate opinion in regard to the extent of the tin ores of Lost River, Brooks Mountain and Cape Mountain cannot be expressed until more development work has been done.

Another part of this region, farther inland and consequently not so accessible, where tin has been found is known as the Ear Mountain country. It is claimed that several ledges have been discovered in this vicinity, but no attempt has been made to develop them. According to the United States geological survey the formation of this particular region is very ancient. Rocks have been found there which are so old that it is difficult to classify them. These rocks are black and of extreme hardness. Roughly estimated the area of Seward Peninsula in which tin has been found is 1,000 square miles.

Considered in the light of all available data I believe that tin mining in Seward Peninsula is a very promising industry. Any person familiar with quartz mining knows that a great deal of expense is connected with the development of ledges, and money must be expended in order to develop the tin ledges of this part of Alaska. Transportation facilities must be provided so that the ores can be transported from the mines to the seaboard, and thence to a smelter conveniently and favorably situated. It is the general opinion that this smelter should be constructed somewhere on Puget Sound. The large quantity of fuel required for smelting ores makes it apparent that the tin ore can be concentrated and the concentrates shipped to a smelter on Puget Sound and reduced there at a less cost than fuel can be shipped to Alaska and used by a smelter to secure the same results at the mines. The development of the tin mines of Alaska is simply a question of time and the intelligent use of capital.

Photograph by B. B. Dobbs.

WAREHOUSES OF THE WILD GOOSE COMPANY AT WHITE MOUNTAIN.



Photograph by B. B. Dobbs.

INTERIOR OF A ROAD-HOUSE.

Quartz Mining

BIG HURRAH, THE MOST NORTHERLY QUARTZ MILL IN NORTH AMERICA—NUMEROUS QUARTZ PROSPECTS ON THE PENINSULA—ENCOURAGING DISCOVERIES ON THE KOBUK AND NOATAK RIVERS—THE OMILAK SILVER AND LEAD MINE—OTHER VALUABLE MINERALS.

QUARTZ mining generally succeeds placer mining. Placer gold is easily discovered and easily extracted. Quartz ledges are not so easily found and when found usually both money and effort are required to develop them. And after they have been developed more money is required to equip the mine with a mill for reducing the ore. Placer mining is a line of work that appeals to the poor man. If he be fortunate enough to strike rich diggings in shallow ground, and if he have available water, a fortune comes easy. In every mining camp where gold placers have been found, for several years succeeding the discovery almost the entire interest of the community is centered in this kind of mining. Several years elapse after the discovery of placers before there are any development of quartz. It is claimed by mineralogists, and the theory seems tenable, that a placer region is a poor place to look for quartz. The argument adduced is that placer gold originally came from ledges, and that the ledges that may have existed in placer regions, have given up their values long ago. But it is also apparent in the history of gold mining that ledges containing the precious metal are to be found in the region of placer deposits, if not in the immediate vicinity.

During the past three years there has been some prospecting in the Nome country for quartz. Promising ledges have been found in many parts of the peninsula, near Nome, in the Solomon River country, at Topkuk, in the Council District, in the Kougarok District and on the Arctic slope. To this list I might add the ledges of tin which have been discovered in the York region and at Cape Prince of Wales.

BIG HURRAH QUARTZ MINE.

So far the only quartz mine that has been developed is on Big Hurrah Creek, a tributary of Solomon River. This mine was developed in 1902 by T. T. Lane. The country rock at the mine is a calcareous schist and the ledge is a fissure vein having an average width of five feet. The ore is free milling, there being very little concentrates.

A ten-stamp mill was erected on this property in 1903, and in the early part of the season of 1904 ten more stamps were added to the mill. This mill has been in operation ever since it started, and is now crushing from sixty-five tons to seventy tons of ore daily.

The mill is modern and up-to-date, being equipped with gasoline engines. Arrangements have also been made for the use of water power which is available at certain seasons of the year. In September, 1904, mining operations had reachd a depth of 200 feet, and at that time there were 20,000 tons of ore in sight. I am not informed of the average value of this ore, but the mine has been profitably operated ever since the dropping of the first stamp. I have seen samples of rock from this mine that contain extraordinary values. I know from common report that this is a splendid property, and the outlook for its continuance as a dividend property is very favorable.

Photograph by F. M. Grout.

BIG HURRAH QUARTZ MINE.

This is the most northerly quartz mine in North America. It is now owned by Mrs. Charles D. Lane. The superintendent of this mine is J. M. Williams, of Grass Valley, California, a man of extensive experience in quartz mining.

NOME QUARTZ MINING COMPANY.

The Nome Quartz Mining Company is a corporation that has extensive quartz holdings in the vicinity of Nome, on Anvil Creek, Glacier Creek and Snow Gulch. Up to this date the only work that has been done has been in the line of prospecting. The result of prospecting has been so encouraging that during the winter of 1904-05, the company was able to sell a large block of stock which has provided it with money for development purposes and the construction of a mill. The ledges where work has been done have shown some excellent assay values, and it is hoped that with the funds at the disposal of the company it will be possible to develop another valuable quartz property in Seward Peninsula.

SOLOMON QUARTZ MINING COMPANY.

The Solomon Quartz Mining Company is a corporation owning twelve quartz claims and a water right on Big Hurrah across the stream from the Lane mine. The officers of this company are: C. E. Hoxsie, president; J. P. Pearson, secretary and treasurer; George R. Williams, manager; William Struggnell, F. Vanstan, and C. Ringger constitute the balance of the board of directors. This company has been sinking on a true fissure vein which is fifteen feet wide at the bottom of a shaft 110 feet deep; the walls are of altered slate, and the vein consists of a gray quartz having a blue tint. The vein matter contains free gold. Average assays of rock taken at a depth of seventy-five feet are $17.40 the ton. It is proposed to construct a mill on this property in the near future. Several other promising quartz prospects have been discovered in the Solomon River country.

OTHER QUARTZ PROSPECTS.

ON THE TRAIL.

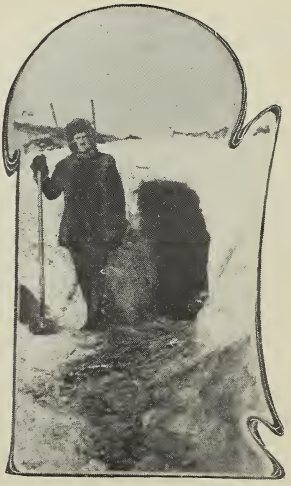
Some work has been done by Harry Hill on quartz croppings at Topkuk, but the value of this property has not as yet been ascertained. Some of the rock has shown very good assays. It was the intention of the owner last season to put a cyanide plant on this property. Much of the rock is partially decomposed, and it is believed that it can be successfully worked by means of the cyanide process.

A recent quartz discovery on Rock Creek, a tributary of Snake River, caused a great deal of excitement among the quartz-mining contingent of Nome, as it was believed that a ledge of tellurium ore had been found. No development work has yet been done on this property.

There are quartz veins on the Kruzgamepa River, in the region of Salmon Lake, Joe Sliscovich has been working on one of these ledges and has taken out some samples of good ore.

Quartz ledges have been found in the Kougarok District, but as the miners of this region have only begun to develop the placer prospects it is too early to obtain any definite knowledge as to the extent or quality of the quartz ledges of this part of the country There are also ledges in the Council District, but they have not as yet been developed into mines.

A promising looking field for quartz mining is in the Norton Sound country. Between Norton Sound and Golovin Bay there is a contact, and there are ledges in the neighborhood of this contact, but they are as yet unprospected.


He Has Tunneled Out.

The only quartz ledges on the Arctic slope that have been prospected are on Kobuk River. This is a remote region, several hundred miles from Nome and a long way from any base of supplies. Miners from this territory report that the quartz prospects are the most favorable feature of the mining outlook of this district. Several ledges have been discovered and located. Some of these are of great size, but as yet none have been found that contain extraordinary values. That ledges containing high grade ores exist in this part of the country is believed by everybody familiar with the country and its history. Very rich samples of float copper ore have been found in this part of Northwestern Alaska. Paddy O'Donnell, a quartz miner of experience, is devoloping a large ledge near the Kobuk River. Samples of rock from this ledge show values of both gold and copper which, if they go down, will make it a property that can be profitably mined.

From information I have obtained from prospectors, there is a splendid looking quartz country near the source of the Koyukuk and Chandlar Rivers. These streams discharge into the Yukon, and their head-waters are in a comparatively unknown and unexplored country.

OMILAK SILVER MINES.

The first mines ever discovered in Seward Peninsula were located in the latter seventies in the vicinity of Fish River, in the Golovin Bay country. They are known as the Omilak Silver Mines. This property was discovered by a sailor who had seen specimens of the ore brought down by the natives, who obtained from this region pieces of nearly pure galena which they broke into small cubes and put into bullet moulds adding melted lead to make bullets, so as to economize the lead bars which they bought from the traders. The sailor took specimens of the ore outside and had it tested. It was found to be valuable. John C. Green chartered the schooner "W. F. Marsh" and made a trip to this part of Alaska, taking ten men with him. He found the prospect of the mine very encouraging, and in 1881 organized the Fish River Mining District, which was the first mining district in Northwestern Alaska. It included all of Seward Peninsula. He made two locations on the ledges, and started to take out several tons of ore with him to the states. His vessel was wrecked in a gale off Cape Darby, but Mr. Green and his crew succeeded in getting ashore and made their way to St. Michael, where the Revenue Cutter Corwin furnished them transportation to their homes. This was a disastrous venture, but Mr. Green made another trial the year following, which was more successful. He has since mined and shipped from this ore body near $100,000 worth of ore. This mine has practically paid its way, but the expensive method by which it has been operated and the great cost of transportation, has prevented the realization of any profit.

The last shipment of ore from this mine consisted of 82,100 pounds which was sold to the smelter for $159.00 the ton. The returns from this ore were 142.29 ounces silver, 74 per cent. lead, and two dollars in gold the ton.

The ore has been taken out of a great quarry sixty feet in diameter. Five shafts fifty to sixty feet in depth have been sunk on the north slope of the ledge. It is more appropriate to say that this is a mountain of ore than to call it a ledge. In this vast mineral deposit are ledges which contain very high values. The hanging wall is limestone, and the foot wall schistose.

OTHER VALUABLE MINERALS.

The only resources of any consequence in Northwestern Alaska are minerals. As gold is the most valuable it has attracted the greatest attention. There is a possibility, however, that the tin of this country will receive a liberal share of attention when capitalists and mine operators take hold of the tin properties. There are other minerals in addition to these which possess economic value. Their development awaits another era in the history of this country, when cheaper wages and better transportation facilities will permit of economical development work, and operations can be profitably conducted.

The first of these other minerals is coal. Northwestern Alaska has a fuel supply adequate for its own needs, and possibly sufficient to furnish fuel to a part of the world.

Under present conditions coal can be mined in the states and shipped to Nome cheaper than it can be taken from the coal mines of Seward Peninsula and transported to Nome. Most of the coal of Northwestern Alaska is of the lignite variety. It makes a quick fire but is not lasting. But there is a grade of coal in the vicinity of Cape Lisburne that contains seventy-nine per cent. of fixed carbon, approaching very near to an anthracite coal. While it is a better quality of coal than the average coal shipped to Nome, it never has been mined or used by people in the peninsula because of the expense of mining and transportation.

From Cape Lisburne and extending back through a large area of this north country towards the Kobuk, Noatak and Colville Rivers is a formation in which numerous coal veins have been found. Deposits of coal have been discovered in many other parts of Northwestern Alaska. Coal has been found in the vicinity of Nome, near Norton Bay, and there is coal in a number of places on the Yukon. There is a very large vein of coal on the Kugruk River, between Candle Creek and Inmachuk River. But in all probability the greatest deposits in all the north country are in the basin of the Colville River. J. M. Reed, a prospector, who in 1903, went to the Colville country and explored about 300 miles of the river, told me that he saw pieces of coal in nearly every stream that flowed into the Colville, indicating that these tributaries had cut, at some place in their course, through veins of coal. The formation of this region indicates the presence of petroleum. Great beds of asphaltum, the residuum of petroleum, are reported from this part of Alaska. It will be a great many years, however, before this fuel deposit has a commercial value.

NEAR COUNCIL CITY.

Photograph by B. B. Dobbs.

CRAFT'S ROAD-HOUSE.

It would be wise for the government to thoroughly explore and investigate the economic value of the Colville basin; not for immediate needs, but as a possible fuel supply in the generations to come.

In the early days of Nome, many miners believed that a platinum strike would be made. The principal supply of platinum comes from the rivers of the Ural Mountains in Russia. It has been found in small quantities in California. The belief in the existence of platinum in Northwestern Alaska has not yet been realized, but the vast areas which are yet unexplored contain possibilities, not only of platinum but of osmium and some of the other rare and very valuable minerals. And no one need be surprised if diamonds should be discovered in some part of Alaska.

In the vicinity of Nome, small quantities of metallic bismuth have been discovered, and several graphite ledges have been located. On Bendeleben Mountain, not a great distance from Council City, mica has been found, but whether it exists in quality and quantity sufficient to be profitably mined is a question to be determined.

BED ROCK ON No. 3 OPHIR CREEK.

Methods of Mining

TRANSITION PERIOD OF THE NOME COUNTRY—UTILIZATION OF WATER BY CONSTRUCTION OF DITCHES AND INSTALLATION OF MODERN HYDRAULIC MACHINERY.

THE question of method is most important in mining. The work that was done in the early days was by the old-fashioned methods, with rocker, long-tom and sluice-boxes. These methods secured good results where ground was very rich. Four men shoveling in six hours on Snow Gulch in 1899, secured in the clean-up $3,000, and the first clean-up on Discovery claim, Anvil Creek, was $20,000. The concentrated placers containing such values as Anvil Creek and Snow Gulch are not found in many streams. But there are new strikes every year. The persistent prospector digging holes in the ground occasionally finds a deposit that is very rich, and there is no doubt that these very rich spots will be discovered every year for many years to come.

The very rich gravels found by the early explorers have been partially exhausted, and attention has been directed to the vast areas of unconcentrated placers which comprise hundreds of square miles of this part of Alaska. The rocker, the long-tom or the sluice-box does not provide the proper method for mining ground that contains less than one dollar the cubic yard. In these unconcentrated placers it becomes a question of the miner's ability to handle a large quantity of gravel to obtain a profit. As a consequence, improved modern mining machinery is required, and ditches must be constructed so that water under pressure can be utilized to wash down the gravel banks. Resort must be had to such methods as are provided by hydraulic elevators, by dredgers, and by steam shovels.

It may be properly said that the Nome region is now in a transition period between the exhaustion of the shallow placers which were first discovered and the beginning of operations by hydraulic and other improved methods upon the unconcentrated placers wherein the greatest wealth of the country lies. The greatest length of ditches constructed and the most improved machinery installed have been during the past two years. Preparations are just now making to mine this country, and when all the proposed plans for ditches and machinery are consummated the annual gold product of this country will be very much larger than it has been.

Every year adds to the number of deep diggings, and every year shows an increased output as the result of winter operations. The ancient channels which can be discovered only by "Swede luck," which the patient and persevering Scandinavian describes as "yust sinking holes," are often hidden deep in the benches. It has been found more profitable to mine these deep diggings in the winter time, by drifting and timbering the drifts and hoisting the pay gravel in buckets from the shafts. The dumps which are piled up during the winter season are washed early in the spring when the snow begins to thaw and furnishes water for sluicing. The product of winter dumps in the spring of 1904 was near $1,000,000. News received from Nome this winter indicates that the product of the winter dumps in the spring of 1905 will be larger than it ever has been.

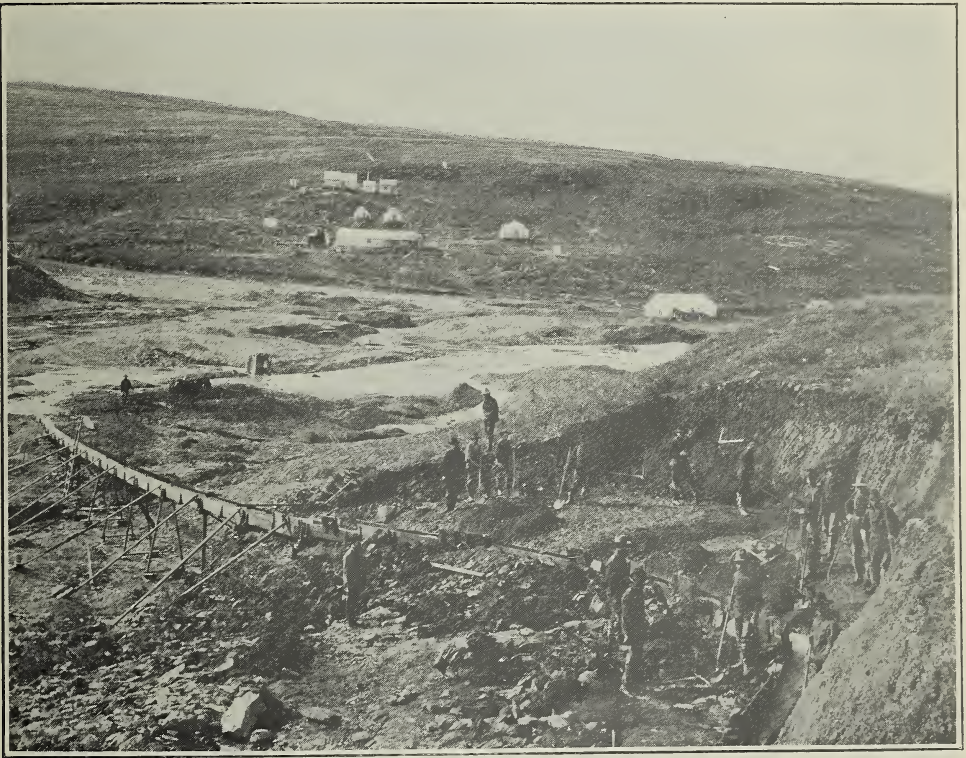
A great deal of winter prospecting has been done on the peninsula by means of thawers. The miner is equipped with a steam boiler with a hose attached to it; steam is forced into the bottom of the shaft to the thawer, which in a short time extracts the frost from six inches to a foot of ground. This thawed ground is shoveled into the bucket and hoisted out, and the thawer used again. By this slow process holes are sunk through the frozen earth. Although the process is slow, it is the most efficient method of sinking in ground that is frozen. A pick is an almost useless implement in frozen earth. Dynamite has but little value in breaking up the frost-filled ground. Ordinary powder is better adapted to this work, a slow explosive being needed in order to blast a hole in the frozen earth.

Photograph by B. B. Dobbs.

A CLEAN-UP ON DISCOVERY, ANVIL CREEK.

There are pay-streaks in the peninsula frost-locked in midsummer, and thawers are required to prospect this kind of ground. The frozen earth is the new condition which confronts the miner. It presents a problem which he must solve in order to make and secure the best possible results in this country. The solution of this problem seems to be by the most simple methods. The sun shining twenty hours out of the twenty-four in midsummer has a powerful effect on the surface of the earth exposed to his rays. Much of the earth is covered with a mossy vegetation which prevents the sun from attacking the frost. By clearing this surface and by ploughing the ground that is thawed so that both air and sunshine can get into it, the process of thawing the frost from some of these streams and hills is much more expeditious than one not familiar with the subject would imagine. If the miner can lend assistance by turning water over the ground, in the process known as ground-sluicing, the frozen conditions are overcome without great difficulty or expense. Proper use of sun, water and air will solve the problem of the frost. Nature froze the earth; provide the right conditions and nature will thaw it.

The common method of mining in Alaska consists of the ordinary process where sluiceboxes are used and the gravel is shoveled in by men; the use of teams and scrapers for stripping the super-stratum of ground that contains no pay; the use of horses and scrapers for removing the tailings. Most of the gold that has been extracted from Seward Peninsula has been taken out by this method. But the expense of handling ground by this means would not permit the working of gravel deposits containing less than $1.00 the cubic yard, and as vast areas of auriferous ground contain less values than this, it became necessary to adopt a more expeditious and a cheaper method of handling the gravel. A resort was had to the various plans of hydraulicking. With ditches furnishing ample water under sufficient pressure, there is no question of the great value of hydraulic methods in mining. The essen-



Photograph by B. B. Dobbs. **SLUICING ON SNOW GULCH.**
Glacier Creek and the Hot Air Bench Mine in the Distance.

tials for successful hydraulic operations are: First, plenty of water under adequate pressure; second, grade so that the tailings may be carried away; and third and most essential, a deposit of gravel of sufficient depth and value to be profitably operated.

Seward Peninsula has an abundance of water. Expense must be entailed in the construction of ditches for the utilization of this water. But the hydraulic miner encounters his chief obstacle after he has solved both the problem of water and the value of his gravel deposit. There is a lack of grade in this country. By building long ditches and tapping the water near the sources of the streams, it is possible to obtain an adequate pressure at the ground to be mined, but lack of grade creates difficulties in disposing of the tailings from mining operations. Recognizing this impediment most of the hydraulic mining operators in the Nome country have installed elevators, and by this means have attempted to overcome the difficulties presented by a lack of grade. Some of these hydraulic elevators have been operated very successfully, and notably where there has been sufficient depth to the gravel deposit to enable miners to work a considerable time without changing the location of their plants. But where the ground is shallow and the elevators must be frequently moved the pay must approach the degree of high grade in order to make operations profitable.

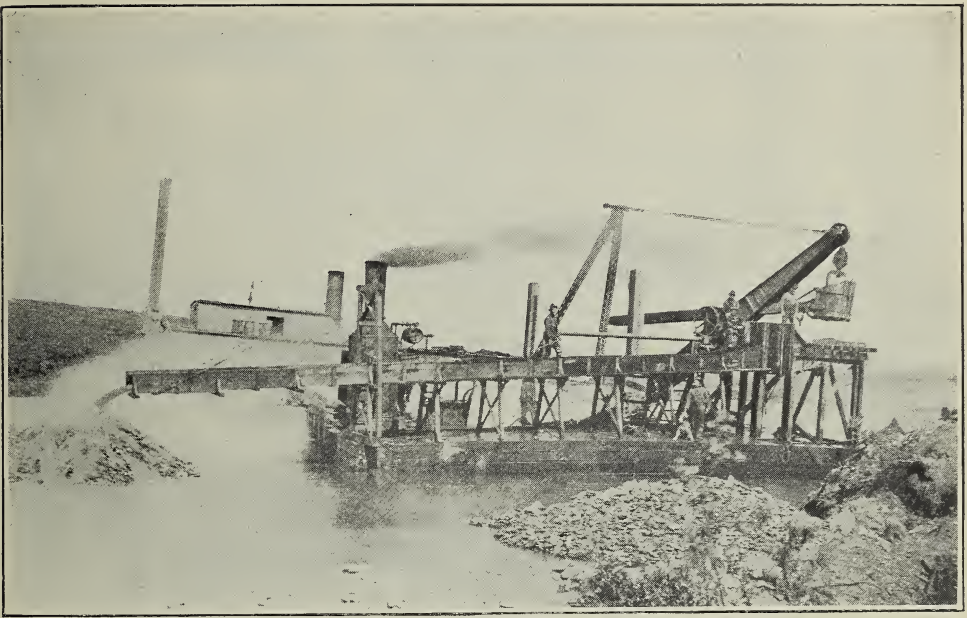
Photograph by B. B. Dobbs.

VIEW OF OPHIR CREEK, CLAIM NO. 14 IN THE FOREGROUND.

Where it is possible to use giants and monitors and dispose of the tailings by gravity and water this kind of mining is the least expensive and the most profitable. Of all the ground that has been opened the mines of Daniel's Creek present the best opportunities for successful hydraulic mining. At this place the Topkuk Ditch Company has water in sufficient volume and under sufficient pressure to tear down the gravel banks and carry the gravel through the sluice-boxes, and the grade is ample for disposing of the tailings.

There are many other properties in the peninsula where the conditions are favorable for working with giants and monitors. On Cripple River and Oregon Creek where an extensive ditch will be constructed this season by the Cedric Ditch Company there are favorable conditions for this kind of mining. There is no doubt of the superiority of this method if the conditions are favorable. It possesses the advantage of removing the greatest quantity of gravel at a minimum cost, and this naturally means a maximum profit.

The placer deposits of Seward Peninsula are most often found in a region that is comparatively flat. In such a country the use of giants and monitors are not efficacious. The expense of taking care of the tailings greatly increases the cost of mining. The famous Ophir Creek in the Council District, which probably contains more gold than any other stream in Seward Peninsula, possesses the disadvantage of a lack of grade. The Wild Goose Mining and Trading Company, which has larger holdings on this stream than any other corporation or any individual, has constructed one of the largest ditches in the north country for the purpose of working its ground. This company has successfully used hydraulic elevators. George James, of Everett, Washington, and his associates own No. 14 Ophir Creek. They have done some excellent and clean work by the use of derrick and shovels operated by steam. I do not know the cost of handling gravel by this method, but the work on No. 14 Ophir Creek has been both successful and profitable. On Anvil Creek the Pioneer Mining Company has succeeded with the steam shovel. Mr. Lindeberg,



DREDGING ON SOLOMON RIVER.
Successful Operations by C. A. Ferrin, Manager Northern Mining and Trading Co.

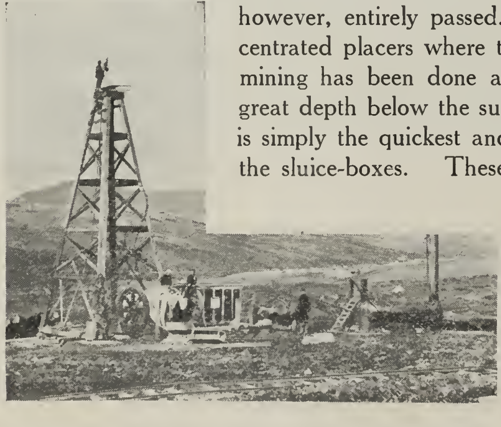
the president of the company, is favorably disposed to the steam shovel, believing that it is adapted to the best and most economical workings of many of the mines of this country. With a steam shovel it is necessary to have a considerable depth of gravel and a comparatively uniform bedrock. The bedrock of Seward Peninsula contains gold some times to a depth of several feet; and the difficulty of operation with a steam shovel is encountered in obtaining these values from the bedrock.

SUMMIT BENCH.
Deep Diggings Developed by Black & Schuler

As yet comparatively little work has been done by the dredging process. Mr. C. A. Ferrin, manager of the Northern Mining and Trading Company, has demonstrated the success of the dredger in Solomon River, and he believes that for a large area of this country it is the best method of mining. Last season his dredger removed an average of nine hundred yards of gravel in twenty hours. Eight men did the work. To remove this quantity of gravel in twenty hours by the primitive process of pick and shovel would require a working force eighteen times larger than the force required to operate the dredger. Mr. Ferrin estimates the actual cost of operations with his dredger at thirteen cents and a half the yard. The largest expense was for fuel, two tons and a half of coal being consumed every day. The work was to a certain extent experimental, but the success obtained will lead to some extensive operations. One great advantage of the dredger over the steam shovel is the disposition of the tailings. In most of the mining that has been done in Seward Peninsula it has cost more to dispose of the tailings than it cost to get the gravel into the sluice-boxes.

The successful and profitable mining of the future on Seward Peninsula will be done by giants and monitors, by hydraulic elevators, by derricks and shovels, by the steam shovel and by dredgers. The intelligent miner will be able to determine by the nature and character of his ground the method that is best for him to use.

The days of the sluice-box and shoveling-in method have not, however, entirely passed. There are many rich deposits of concentrated placers where this method will be used. Where winter mining has been done and large dumps have been taken from a great depth below the surface the question that confronts the miner is simply the quickest and best method of getting these dumps into the sluice-boxes. These dumps are usually cleaned up by water obtained from melting snow. The gravel must be very rich to pay for the expensive work of drifting and hoisting the gravel from the deep shafts in buckets. The matter of sluicing is a simple proposition and depends upon the availability of water.

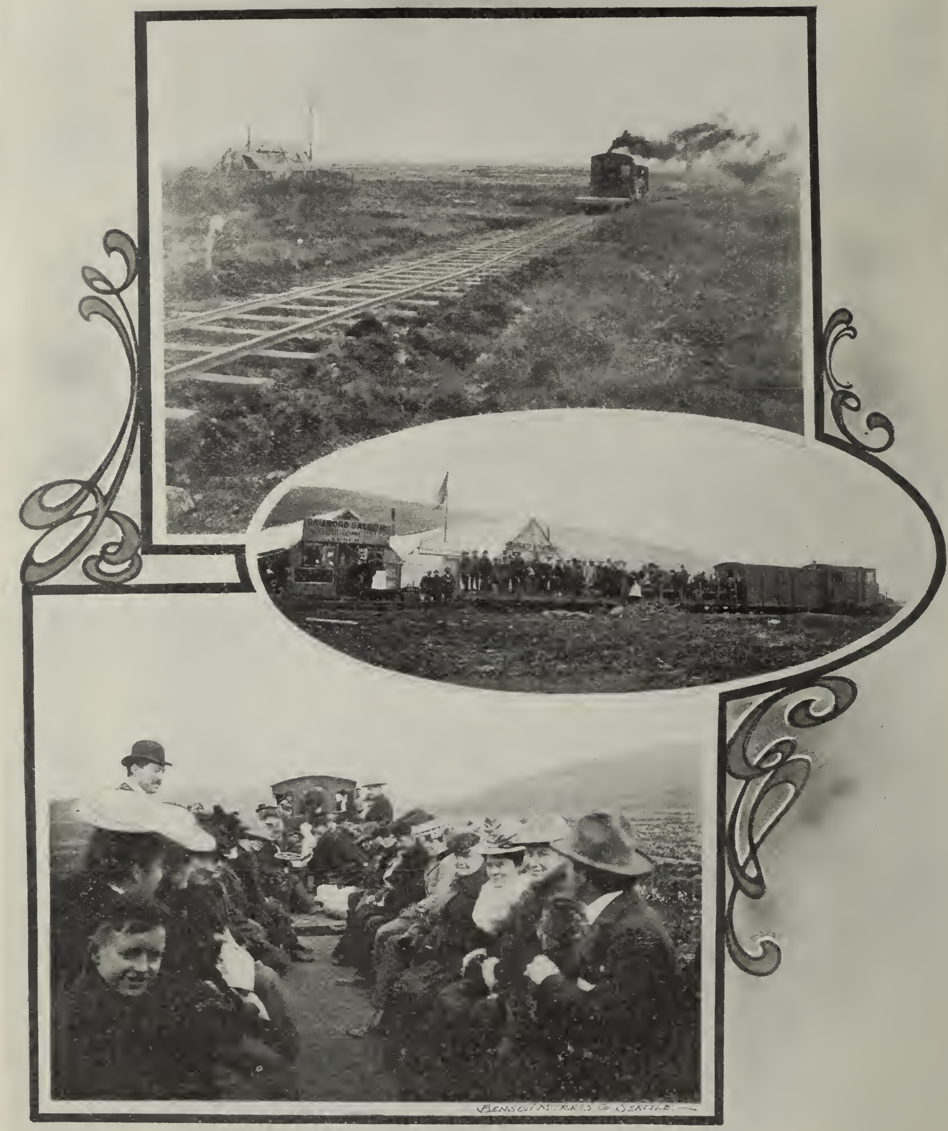


PROSPECTING WITH A KEYSTONE DRILL.

Facilities for profitable mining

may be obtained by utilizing the water power which can be harnessed in the higher altitudes of the peninsula. Converted into electricity this power can be transmitted to the mines to be used in any manner desired—for pumping water, hoisting gravel from shafts, handling gravel by means of derricks or steam shovels or dredgers. But the practical application of this involves a large preliminary expenditure, and at the present time the minds of mining operators seem to be centered in the idea of ditch construction and the utilization of water by gravity for the purpose of operating their properties. The most important factors in the general development of the resources of Seward Peninsula are water and transportation, ditches and railroads. The extremely favorable prospect of the mining industry in this country is due to the fact that great interest is at present focused in these two industrial features.

NAVIGATING THE NEUKLUK WITH A DOG TEAM.



Photograph by B. B. Dobbs.

THE NOME-ARCTIC RAILWAY.

Speeding Across the Tundra; Banner, the Most Northerly Railroad Station on the Continent; Sunday Excursion to Anvil Creek.

Methods of Travel

THE two most important industrial features of Northwestern Alaska relate to water and transportation. Water is as essential to mining as it is to agriculture, and without proper transportation facilities a large area of this country never would be developed. When miners have to pay from $200 to $300 the ton for transporting their supplies from Nome to the mines which they desire to operate, it is apparent that these mines must contain extraordinary values in order to be profitably worked. The extensive mineral deposits which contain values designated as low grade will remain undeveloped until such time as railroads have provided a cheap method of transportation.

The necessity of railroads in this country is apparent to everyone familiar with the situation. The character of the surface of the earth, the swampy coastal plains or tundri, the hillsides covered with reindeer moss, growing in a comparatively dry crust of earth over a treacherous bog, and the miry spots to be found in the mountains as well as on the plains, are evidences of the difficulties to be encountered in constructing wagon roads. Freighting is done all over the peninsula by means of teams and wagons, but in all of Northwestern Alaska there is not a highway or anything that can be designated by the title of road. The nearest approach to a road is a river bed. When a teamster can follow the course of the stream, sometimes wading through deep fords, at other times jostling over big rough boulders, he is fortunate and happy. Where the trails cut across the hills there are frequent places where the horses flounder belly deep in muck and mire and the wagon wheels drop to the axle in the soft ground. No wonder that freighting is expensive. Horses as well as men must be adapted to this work. A nervous horse will quickly wear himself out, and a nervous man will quit the job.

But notwithstanding this physical condition, railroads are easily constructed. A narrow-guage line, where not much attention is paid to the road-bed, the object being simply to construct a road over which freight can be hauled, can be built at a cost of $5,000 the mile. For short hauls there is no question of the superiority of a narrow-gauge railroad over any other methods of transportation in this country. By ditching and drainage the tundra, and marshy ground of the upland, a firm and permanent road-bed for a railroad can be made. This fact has been demonstrated by the Council City and Solomon River Railroad Company, which is building a standard-gauge road from the mouth of Solomon River to Council City. Sixteen miles of this company's road which has been constructed and is in operation, is evidence of the assertion that a firm, permanent road-bed can be constructed without difficulty in this country.

The development of Seward Peninsula will necessitate the building of railroads from a seaboard terminal to every important mining camp. The men who are now building railroads in this part of Alaska are doing a great public service. They are assisting to develop the country. They are factors in the industrial work of this region second only to the men who are digging ditches and providing the adequate water supply to wash the auriferous gravels.

Transportation in the winter time is not so serious a problem. After the snows have fallen and the trails have been broken, it is not a difficult matter to haul on sleds a load of five or six tons across the country with a team that could not haul more than a ton in the summer season. The only detriment to the work of freighting in the winter time is the cold weather and frequent blizzards. The snow storms obliterate trails and often necessitate a great deal of work to get them open for traffic. Blizzards are dangerous things to encounter. In the early days the mortality list resulting from blizzards was unnecessarily long. In later winters a better understanding of the blizzards' habits has made fewer casualties from freezing.

Stage lines run from Nome to important parts of the peninsula during the winter season. The stages are on runners and are covered completely with heavy canvas. A stove inside the vehicle has given the conveyance the name of hot-air stage. A stage line with vehicles of this description is in operation between Nome and Council City. It runs on schedule time except in few instances where severe storms interfere. There are convenient road-houses on the trails where the stage driver and his passengers may be housed when the short winter day is done.

A REINDEER IN HARNESS.

In the history of Alaska dogs are inseparably connected with the pioneers. Dog teams were the primitive method of transportation in the winter season, and they are used today where quick service is desired and light freight is to be transported. Dogs are used almost entirely for transporting the mails in Alaska. Every winter the mail to Nome is carried by relays of dog teams down the Yukon and across from Unalakleet to Nome; and from Nome it is sent to every postoffice in Northwestern Alaska by dog teams. The distance between Nome and Unalakleet is 240 miles, and it has been covered with a dog team, by mail carrier M. L. V. Smith, in sixty-nine hours total time. Mail Carrier Eli Smith has the distinction of having made the record trip with a dog team in this country. He brought the Kotzebue mail to Nome, a distance of 350 miles, in five days. If the mail service on the Yukon was as efficient as the service furnished by Calkins & Company on Seward Peninsula, the residents of Nome would get their mail in the winter time in forty days or forty-five days instead of waiting for two months or more for it.

The phase of the transportation question between Nome and the states is simply that of an ordinary ocean voyage until the steamer drops anchor in the roadstead at Nome.

WINTER TRAVEL OVER THE ICE OF BERING SEA.
Ice-Cliff Formed by Winds and Tides at the Time of the Freeze-up.

It is a long voyage, the distance from Seattle to Nome being 2,350 miles. The vessels of the Nome fleet are from eight days to ten days making the trip. On this journey the passenger approaches very near to the line in the Pacific Ocean where in traveling westward, a day is gained; and where the eastbound traveler loses a day. In order to get to Nome the vessel must sail a long distance to the westward, and the traveler will cross a meridian that passes to the westward of the Sandwich Islands.

If the weather be favorable the trip will be delightful. When the vessel arrives at Nome the passenger will receive his first introduction to the difficulties of transportation in the northland. Instead of the vessel tying up to a pier and permitting the passengers to walk ashore on a gang plank, the captain of the ship will anchor in the roadstead, two miles from shore. A little tug drawing a big black barge will steam from the shore out to the vessel. The passengers will be landed upon this barge, and the tug will haul them ashore. If the weather be favorable and the sea calm, the barge will be hauled in so that the passengers may land by a gang plank. But if the water be rough, as it frequently is, the new arrivals will be hoisted from the barge by means of a derrick and boom and slung through the air onto a wharf built at the water's edge.

Every pound of freight shipped to this camp must be lightered ashore from the vessel carrying it. In order to transact the business of discharging freight at Nome there are several lighterage companies and a small army of longshoremen. The cost of lighterage is about four dollars the ton, half as much as the cost of transporting freight from Seattle to the spot in the roadstead where the ship drops anchor.

The necessity of a pier or a dock at Nome is obvious. The question is, can one be constructed that will withstand the storms, and not be destroyed by the ice when it goes out.

I have neglected in this story, which is but a brief reference to some of the phases of transportation of the north country, to refer to the prospector with a pack on his back. In 1900 dozens might be met daily on every trial, each man with a pack on his back and a shovel on his shoulder. Carrying his pack across the swampy tundra, over the hills, through wet willow thickets, fording streams waist deep, sleeping at night in wet blankets and eating hastily prepared fare—pan-cakes, bacon and coffee,—is the experience of nearly every pioneer of this country.

Wherever practical or possible, the rivers of Seward Peninsula have been used for transportation purposes. But none of the streams are navigable except for small, light draft vessels, and wherever a miner could reach his destination by following a water course, a means of transportation was open to him. A small boat could be poled up the river or towed up stream, men and dogs, sometimes horses being utilized at the end of the tow line. The work of poling and towing a boat up most of the streams of Seward Peninsula, is an exceedingly laborious task, but it has been the only method by which prospectors in the early days were enabled to get supplies any great distance into the interior.

Ditches the Desideratum

THEIR INFLUENCE ON THE DEVELOPMENT OF THE COUNTRY—MANY DITCH ENTERPRISES REPRESENTING AN AGGREGATE INVESTMENT OF NEAR $2,000,000.

IF death will covenant with me that I may "die in the last ditch" constructed in Northwestern Alaska I will measure my life by centuries. The work of making ditches in this country has fairly begun. It started in 1901 and at the close of the season of 1904 the hills and plains of Seward Peninsula were gashed by 175 miles of ditches. A regiment of men will be digging ditches this year and when the last steamer toots good-bye to Nome in the fall of 1905 a hundred miles or more will have been added to the total length of ditches in this part of Alaska. These ditches represent an investment of more than $1,500,000, possibly $2,000,000. The equipment necessary for their construction has cost a good many thousand dollars.

All this is preliminary work and expense; preparation to harvest the gold crop of the country. Placer gold mining requires water—quantities of it. A thousand streams that awaken in the spring from their winter's sleep and hasten in a wasteful race to pour their torrents into the sea will be touched by ditches that will say to these idle waters:

"You have a work to perform among the industrial activities that have begun in this land where you have frolicked for ages. Man has discovered the treasure long hidden in the thousands of square miles of this country, and he needs you to tear down the gravel banks and wash the bedrock so that he can get the gold they contain."

There is much work for water to do. It must travel through ditches, down hill and up hill through great iron pipes, until finally there is sufficient elevation behind it to hurl it through a monitor with such force that it tears a hole in the hill-side and makes great boulders dance like little pebbles beneath the stream from a garden hose; and when it leaves the sluice-boxes with the yellow glitter above their riffles that brings the glisten to the eyes of the miners it must travel heavy laden with silt sluggishly to the sea.

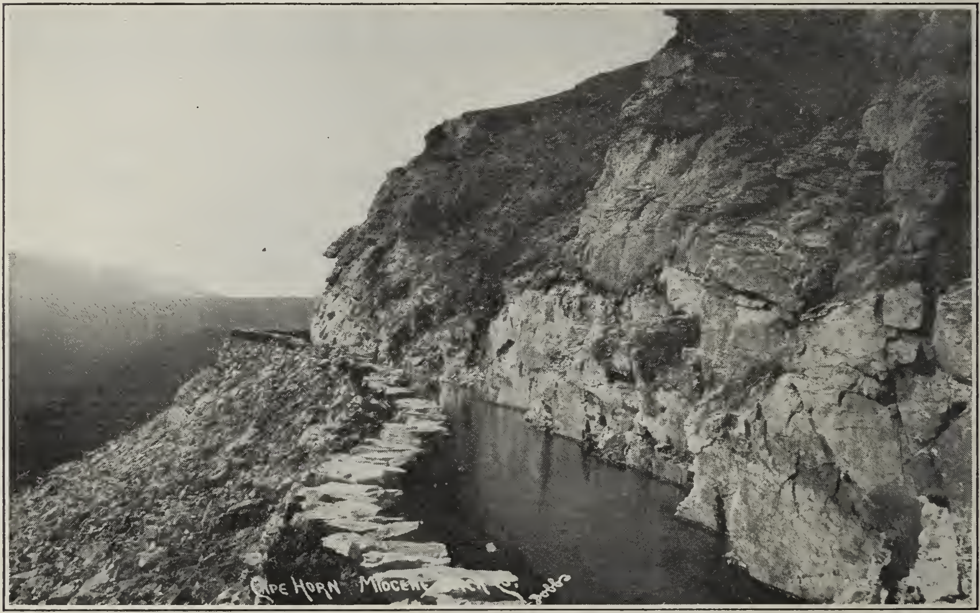
There is great activity in Seward Peninsula this year making preparation to yoke the water so as to hasten the work of mining the gold. Horses and scrapers, men and shovels—busy through all the days and twilight nights of summer. The mining men of Nome have learned the value of ditches. The men who have appropriated the water own an interest in all the mines that require this water to be successfully operated.

This foreword will introduce the reader to the subject of ditches and ditch construction. The prosaic account of this work which follows is published to illustrate the great values which must be in the ground of Seward Peninsula. This description of ditches and ditch construction shows a vast amount of human endeavor which would not be exerted if there were not bright prospects of compensation.

THE MIOCENE DITCH COMPANY.

The Miocene Ditch Company owns near fifty miles of ditch, delivering water on the most promising and valuable mineral grounds of Seward Peninsula. This company is the pioneer ditch concern of the country. It was originally composed of J. M. Davidson, W. L. Leland and W. S. Bliss, but was not incorporated until 1902. The enterprise originated in 1900. In the following year the first section of the ditch was constructed from Glacier Creek to Snow Gulch. It was five miles and a half long and with the water it supplied the first hydraulic work in Seward Peninsula was begun on Snow Gulch. The biggest clean-up from the Nome gold fields resulted from these operations this season. One clean-up secured gold valued at $54,000. The first water turned through this ditch for hydraulic mining was on August 15, 1901. During the year 1901 the ditch was constructed to Banner Creek.

In the following year the ditch was completed to Hobson Creek, and the principal supply of water was obtained from this stream. In 1902 the company started to build a tunnel through Anvil Mountain. The tunnel, which was finished April 20, 1904, is 1,835 feet long, four feet wide and seven feet high. In 1903 a division of the ditch was constructed to Nome River and another division to Snake River and the main line was enlarged to a capacity of 3,000 miners inches of water. During the previous winter supplies were hauled from Nome and cached along the proposed line of extension, so that the work in the following summer could be prosecuted with vigor and all possible dispatch.



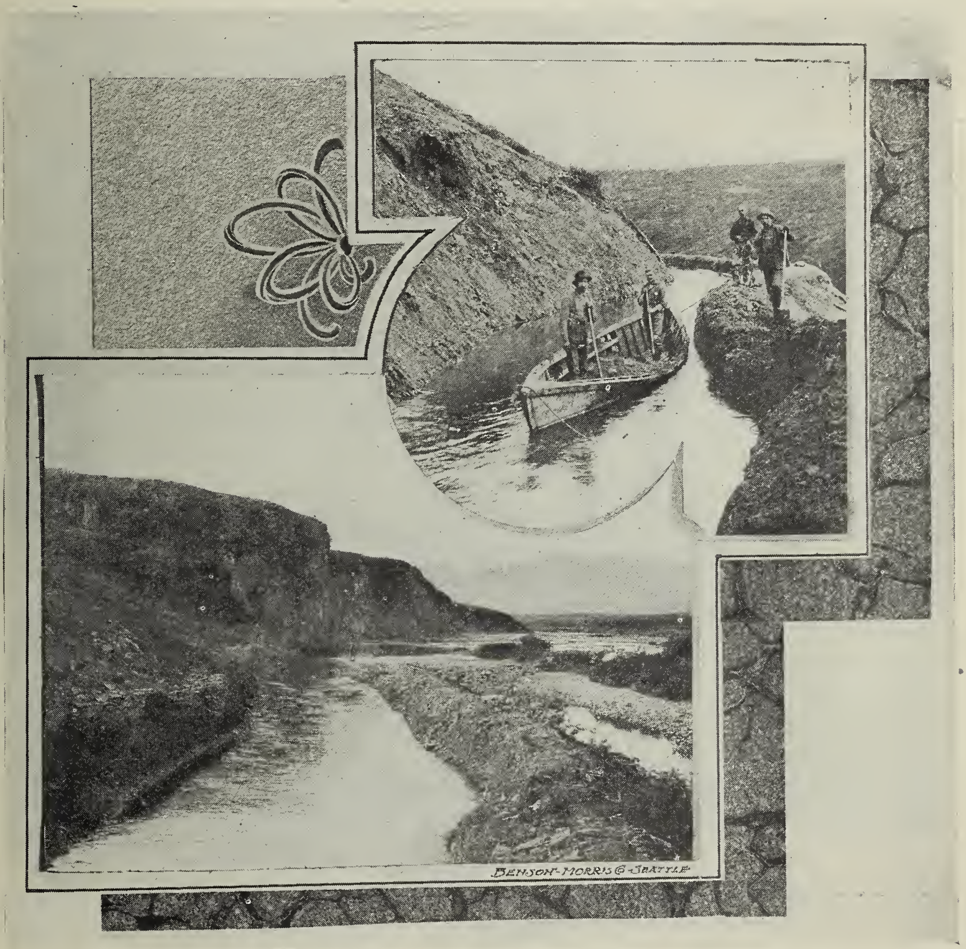
Photograph by B. B. Dobbs.

CAPE HORN, MIOCENE DITCH.

In constructing the Miocene Ditch an effort has been made to use flumes only when it was absolutely necessary, the company preferring to use the native conditions for ditches, and to build embankments of sod or tundra to prevent leakage of water. An accompanying illustration shows a section of the ditch that was made by blasting through the solid rock. This ditch line comprises two inverted siphons—one 400 feet long across Dorothy

Creek and another 1,000 feet long across Manila Creek. One of these syphons is made of forty-inch pipe.

Water is delivered at No. 1 Glacier Creek under 275 feet of pressure. At Discovery claim, Anvil Creek, the pressure is more than 300 feet. The Miocene Ditch covers the mines of Anvil, Dexter and Glacier Creeks and Snow Gulch, and a vast area of other valuable ground. The consummation of the company's plans for extension will largely increase the area to which water can be supplied.



Photograph by Kinney.
WILD GOOSE COMPANY'S OPHIR CREEK DITCH.

The Miocene Company is extensively engaged in mining. Operations with hydraulic elevators have been conducted on Glacier Creek during the past two seasons. The company's ditch has been an object lesson of the great value of ditches to this country. Some miners believed that shovels and sluice-boxes would exhaust the values in the rich claims of this section of the country, but the hydraulic methods made possible by the

Miocene ditch demonstrated conclusively that by the crude methods first in use only a part of the values in the ground had been obtained.

WILD GOOSE MINING COMPANY'S DITCH.

The Ophir Creek Ditch constructed by the Wild Goose Company is the biggest in Northwestern Alaska. The ditch line including lateral ditches is near forty miles long. The ditch has been made so that it may be enlarged to a capacity of 8,000 inches or 10,000 inches. Plans have been proposed to bring water from another water-shed into this ditch, thereby increasing the volume of water and the pressure. The great pressure that can be obtained may be used in generating power for general use in this district.

THE TOPKUK DITCH.

The Topkuk Ditch, owned by Dr. Cabell Whitehead, O. W. Ashby and Henry Bratnober, conveys water from Kutcheblok River to the rich gravel deposits on Daniels Creek. This ditch line is twenty-two miles long and comprises two miles of steel pipe twenty-six inches in diameter. Water from this ditch covers the gravel deposits of Daniels, Eldorado, Ryan, Wellington and California Creeks and a large mineralized area on the Kutcheblok. This ditch carries 1,000 inches of water. The hydraulic mining operations with water from this ditch were begun near the close of the season of 1903. These operations were conducted upon a very rich deposit of gravel on Daniels Creek. This deposit has a varying depth of from five feet to fifty feet. There are some extraordinary values in this gravel. The present operations of the ditch company are on property owned by Jacob Berger and J. T. Sullivan. This property is classed among the best mining ground of Seward Peninsula.

Mr. W. H. Emerson was one of the originators of the Topkuk Ditch project and was formerly president of the company. His interests have since been acquired by Henry Bratnober. It is the purpose of the company to extend the ditch to the head of Silver Bow and to Skookum Creek, a distance of four miles and a half, this season. This extension will furnish a supply of 1,500 additional inches of water, making a total water supply of the Topkuk Ditch Company of 2,500 inches. The ditch discharges water on Daniels Creek at an elevation of 192 feet, and as there is great depth to the gravel deposit and sufficient grade for disposing of the tailings, the Daniels Creek ground is considered to possess the most favorable conditions for successful hydraulic mining.

THE GOLDEN DAWN MINING COMPANY.

This company, of which A. C. Stewart is the promoter and general manager, has an important and extensive ditch enterprise under way on the right limit of Snake River from Bangor Creek to Sunset Creek, a distance of thirteen miles. During the season of 1904 eight miles of this ditch, tapping the waters of both branches of Sledge Creek, was constructed. At the close of the open season of 1904 the ditch was practically finished from Sledge Creek to Boulder Creek. When complete, this ditch will extend from Twin Mountain and Boulder Creeks to Sunset Creek. It will be seven feet wide on the bottom, ten feet wide on top and two feet deep, and will carry two thousand inches of water. It will deliver water on Sunset Creek under a pressure of 300 feet.

This ditch covers a large and valuable area of mineral ground. Every stream and gulch under this ditch line contains gold, which hydraulic operations should successfully mine. Gold Hill, situated opposite the mouth of Glacier Creek and on the right limit of Snake River, is a vast gravel deposit from which gold has been taken in every prospect hole that has been sunk. This hill is a quarter of a mile long, three-quarters of a mile wide and two hundred feet high. Bedrock has never been found in any of the shafts that have been sunk in the hill. The Golden Dawn Ditch will deliver water under a pressure of two hundred feet for hydraulicking this hill. In addition to the streams and benches on Snake River covered by this ditch there is a large area of tundra ground between Sunset Creek and Bering Sea containing gold, and this ground can be supplied with water from the Golden Dawn ditch under a pressure of 400 feet. The company has arranged for the installation of three hydraulic outfits to be operated by water supplied by this ditch, and will begin work during the ensuing season of 1905.

Photograph by B. B. Dobbs.
BUFFALO CREEK, AT THE HEADWATERS OF NOME RIVER.

THE CAMPION DITCH.

Thomas A. Campion was one of the early ditch builders in Seward Peninsula. He began work in 1900 by acquiring a water right on Buffalo Creek, a tributary of Nome River. Since then he organized the Campion Mining and Trading Company in Chicago and has done a great deal of work in the ditch-building line at the head of Nome River. He has a ditch line in the shape of a horse-shoe tapping all the tributaries near the head-waters of Nome River. The company owns a large number of water rights including water rights on Lost and Thompson, tributaries of Stewart River, and water rights on Sinuk River and Windy Creek; also water rights on Grand Central. In order to get the waters from these streams into the Nome River ditch it will be necessary to divert them to the Nome River water-shed from the water-sheds of the streams in which they flow.

During the season of 1904 the company began hydraulic operations with two elevators on Dorothy Creek. It has been planned to construct the Campion Ditch to King Mountain. This ditch has its main intake at the highest altitude of any ditch on the Peninsula.

Mr. Campion has begun the construction of a ditch in the Kougarok District and another on Osborne Creek.

CONSTRUCTING THE ARCTIC MINING AND TRADING CO. DITCH.

ARCTIC MINING AND TRADING COMPANY.

The Arctic Mining and Trading Company is constructing a ditch twenty-seven miles long to convey water from California and Agiapuk Rivers, to Lombard and Sunset Creeks at Grantley Harbor. This company owns 103 mining claims on these streams and thorough prospecting has shown that the gravels contain gold values estimated at $1.50 the cubic yard. Most of the ditch work was completed last season and by the middle of July, 1905, the company expects to have two hydraulic elevators in operation.

Prospecting on the company's holdings has revealed in many instances much larger values than $1.50 the yard. The gravel deposit is extensive and the depth to bedrock is about nine feet.

The company was organized in the winter of 1900-1901 in Youngstown, Ohio, and has a capitalization of $1,000,000. The officers are as follows: J. P. Hazlett, president; D. B. Stambaugh, vice-president; B. Hirschberg, secretary and treasurer; Max. Hirschberg, general manager; T. N. Gibson, mining superintendent.

MINING ON DEXTER CREEK, AND A VIEW OF THE SOUR DOUGH ROAD-HOUSE,
Shel Wettach's Hostelry.

THE FLAMBEAU DITCH AND MINING COMPANY.

This is a strong company which is constructing a ditch from Flambeau River to Hastings Creek. When complete this ditch will be thirty miles long and will carry 4,000 miners inches of water. The company was organized in 1903, and the work has been prosecuted every season since then under the supervision of William H. Lang, the manager. Last year a section of the ditch six miles long was completed on the Flambeau end and considerable work has been done along the entire length of the ditch line. The water rights of the company cover a number of streams between Flambeau River and Bering Sea, among them Hazel, Washington, Irene, Cripple, Discovery, Seattle, Saunders, Derby and Hastings Creeks. The territory adjacent to these creeks embraces a large area of pay gravel containing from a few cents to several dollars the cubic yard.

This season the company is taking to Alaska hydraulic pipe and the other appliances necessary to commence hydraulic mining with the section of the ditch that is now complete. Work will begin on Hazel, a tributary of Flambeau River, at a point where water from the ditch has a pressure of 200 feet. The company owns 12,000 acres of mining land under the ditch, and believes that good values are in the grounds where operations will be conducted this season. The company also owns many mining claims in the vicinity of Nome, on Oregon, Bourbon and Dexter Creeks, and other claims in benches and tundra.

The officers of the Flambeau Ditch and Mining Company are as follows: T. E. Ryan, of Waukesha, Wis., president; George N. Nelson, of St. Paul, Minn., vice-president; J. E. Jones, of Waukesha, Wis., treasurer; William Eli Bramhall, of St. Paul, Minn., secretary; William H. Lang, of Portland, Oregon, general manager.

THE SOLOMON RIVER DITCH COMPANY.

The Solomon River Ditch Company, under the management of Major L. H. French, built a ditch six miles and a half long from Coal Creek to East Fork last season.

Photograph by B. B. Dobbs.

HYDRAULIC MINING BY SOLOMON RIVER DITCH CO.

The ditch from East Fork to Big Hurrah was partially constructed last year. This ditch carries 5,000 inches of water and has a pressure of 110 feet at East Fork. The company installed three hydraulic elevators before the close of last season and did some work.

THE MIDNIGHT SUN MINING AND DITCH COMPANY.

In the spring of 1902 C. A. Giffen acquired a water right on Big Hurrah Creek and in 1904 he began the construction of the ditch line from Big Hurrah to Solomon River. This ditch will be eight miles and a half long, most of it having been constructed last year. It has a capacity of 3,000 inches of water.

The Midnight Sun Mining and Ditch Company is composed of Los Angeles, California, capitalists. C. A. Giffen is the general manager of the company.

THE McDERMOTT DITCH.

The highest-line ditch in the Solomon River country is known as the McDermott Ditch, deriving its name from a well-known miner in the West and in Northwestern Alaska who owned the water right. Most of this ditch was built last year, the work being done by contractor C. L. Morris. This ditch brings water from East Fork across

Big Hurrah Creek in a siphon to a point on Solomon River six miles below Big Hurrah. It has a capacity of 5,000 inches of water and 4,000 inches of water is available in the East Fork at lowest water. The water from this ditch will cover ten square miles of mineral ground under a pressure of 240 feet.

N. O. Hultberg, who conducted the Swedish Mission on Golovin Bay prior to the discovery of gold on Anvil Creek, is the man whose efforts in financing this company secured the money necessary to complete the work of constructing this ditch.

MATLOCK & BEAGLE DITCH.

The Matlock and Beagle Ditch is two miles long, has a capacity of 500 inches of water with the intake at Shovel Creek. The water from this ditch has been used to work property on Kasson Creek where there is a deposit of gravel 150 feet wide and of a maximum depth of twenty-five feet.

NORTHWESTERN DITCH.

The Northwestern Ditch Company is a Nome corporation with the following officers: A. Schneider, president and general manager; Leo Lowenherz, vice-president; C. G. Cowden, treasurer; W. J. Rodgers, secretary. This company was organized in May, 1904, and acquired what was commonly known as the French Ditch properties. The French Ditch was constructed in 1903 by A. Schneider, Mr. Porte and their associates. It was eleven miles long with a capacity of 900 miners inches, and brought water from Osborne Creek to mineral ground on the eastern side of Nome River. The new company has extended the ditch a distance of four miles in the direction of Hastings Creek, with the object of covering the old beach line a short distance back from the shore of Bering Sea where valuable gold deposits have been discovered. This old beach line has been partially prospected from Fort Davis to Hastings Creek and has been found to be rich in gold, the deposits being similar in many respects to the gold found in the present beach.

CRIPPLE RIVER HYDRAULIC MINING COMPANY.

The Cripple River Hydraulic Mining Company, owning sixteen 160-acre tracts of mineral land on Cripple River, has constructed a ditch four miles long and carrying 700 inches of water from Willow Creek to Cripple River. The company began hydraulic operations upon its property last season. This company has plans to build a ditch twelve miles or more long to bring water from Cripple River and deliver it upon its holdings under a pressure of 250 feet. The ground owned by the Cripple River Hydraulic Mining Company contains gold values estimated at $1 the cubic yard.

THE SEWARD DITCH.

Ample capital was secured during the past winter to construct a ditch from Nome River at the mouth of Dorothy Creek to the beach of Bering Sea east of Nome. Mr. C. L. Morris has taken the contract to build this ditch this season. The ditch will be thirty-five miles long and will carry 4,000 inches of water. It will cover such well-known creeks as Dexter, Extra Dry, Lost, Tripple, McDonald, Otter, Peluk, Newton Nos. 1 and 2, Dry, Bourbon, Saturday, Wonder, Center, Cooper, Holyoke and Little. These streams comprise a large part of the auriferous gravels surrounding Anvil Mountain. The ditch will deliver water at the highest part of Dexter Creek under 100 feet of pressure.

The Seward ditch was cradled by John D. Leedy and H. T. Harding. Dr. Cabell Whitehead, general manager of the Alaska Banking and Safe Deposit Company, considered the proposition favorably and assisted in organizing the company and financing the project. Henry Bratnober, one of Dr. Whitehead's associates in the Topkuk Ditch Company, is largely interested in the Seward ditch. The completion of the work that has been planned for the Seward Ditch Company will require a capital of from $150,000 to $200,000.

KUGAROK MINING AND DITCH COMPANY.

The best evidence of the prospective value of the Kougarok Mining District is the number of ditch enterprises that will be started in this region this year. Notable among these enterprises is the work of the Kugarok Mining and Ditch Company, of which J. M. Davidson is president and general manager, and J. E. Chilberg, of Seattle, vice-president. Mr. Davidson has gone to Nome this season to build a ditch thirteen miles long, starting at No. 8 below Johnson's Discovery on the Kougarok River and ending in the vicinity of Arctic Creek. The ditch will be twelve feet wide on the bottom, sixteen feet wide on top and three feet and a half deep, and will carry 2,500 inches of water. It will extend along the left limit of the Kougarok River, crossing Macklin Creek in siphons to holdings of the company near Homestake Creek; thence to the end of the survey, crossing Taylor Creek in siphons.

Seattle, Nome and St. Louis capital is building this ditch, the estimated cost of which is $100,000. The ditch will cover not less than 10,000 acres of valuable mineral ground, and will furnish water for mining operations in this part of Seward Peninsula for the next half century or more.

THE CEDRIC DITCH.

The Cedric Ditch Company, of which Major L. H. French is manager, is constructing a big ditch in the Oregon Creek and Cripple River country. F. S. Smith, a prominent Nome miner, built a part of this ditch last year. The water was turned through it and hydraulic work was begun on a bench of Oregon Creek just before the freeze-up.

The Cedric Ditch Company is a strong organization, financially equipped to carry the undertaking to a successful conclusion. Plenty of water will be provided to wash the large area of auriferous gravels of this region. The known values in the ground under this ditch should make the Cedric Ditch one of the best properties in Northwestern Alaska.

RANOUS MINING COMPANY.

Among the projected enterprises of the Kougarok District this year is the construction of a ditch bringing water from Windy Creek to Kougarok River and to Dahl Creek. This enterprise was promoted and successfully financed during the past winter by Mr. L. P. Ranous, a well known and energetic miner of the Northland. The company was organized in Millbank, South Dakota, and is capitalized at $400,000. The officers are as follows: L. P. Ranous, president and general manager; M. O. Johnson, vice-president; J. H. Brannon, treasurer; J. S. Farley, secretary; Henry Eikman, director; W. A. Warren, engineer. This project contemplates the expenditure of about $150,000. The ditch when finished will be thirty-five miles long (including lateral ditches) and will carry two thousand inches of water. On Kougarok River the water can be delivered under a pressure of two hundred feet. At Dahl Creek the pressure will be one hundred and fifty feet.

This ditch line will cover not less than ten thousand acres of mineral ground. In nearly every prospect hole that has been dug under this ditch line gold has been found, in many places in values sufficient to be profitably mined by sluice-boxes and shoveling-in. This ditch line will cross eight creeks and the volume of water in the ditch will be augmented by tapping the waters of some of these streams. This company has mapped out work for more than a generation.

T. T. LANE'S DITCH.

T. T. Lane has extensive holdings in the Kougarok District. He did considerable work building a ditch in this part of the country last season, and will complete the work this year so that water from the ditch may be made available for mining purposes.

Mr. Lane's ditch work has been an illustration of economical ditch-construction. He has by prospecting demonstrated the great values in the Kougarok benches, and his ditch line will cover some of the most promising property of this unquestionably rich region.

Photograph by F. H. Nowell.
INMACHUK RIVER, A SINUOUS STREAM.

ANOTHER DITCH.

There is another ditch enterprise in the Kougarok District this season. This enterprise is under the management of Mr. Stone, and extensive ditch construction has been planned.

BONANZA-CALIFORNIA CREEK DITCH.

This ditch is one of the largest and most important enterprises of this character proposed for Seward Peninsula. It has been promoted by J. J. King and C. L. Kemp.

George M. Ashford is the engineer who made the surveys. The plan of this ditch is to take water from the head of Bonanza Creek. From this intake the ditch will extend along the left limit of Bonanza Creek a distance of about ten miles to California Creek. The water will be carried across this stream in a siphon. At California Creek this ditch will converge into another ditch carrying water from California Creek. From the point of confluence it is proposed to bring the water around the mouth of California Creek to the head of Ohio Creek and cross the left fork of Jackson Creek to Shovel Creek Mountain.

According to the plans this ditch will carry 4,500 inches of water which will be delivered at Shovel Creek Mountain under a pressure of 264 feet. The total length of ditches from the intakes to Shovel Creek Mountain will be fifty miles. This figure includes another high-line ditch taking water from another source of California Creek. The high-line ditch will carry 1,000 inches of water and will deliver it at the head of Mystery Creek with sufficient pressure for hydraulicking. The main ditch will cover the entire Shovel Creek Basin, and can be made to supply water on all the ground between Port Safety and the mountains, Bonanza Creek and Solomon River. It is estimated that the water of this ditch will cover 150 square miles. Much of this ground is known to be mineralized, but aside from the gravel deposits of Shovel Creek and its tributaries there has not been much prospecting. The estimated cost of the lower ditch is $150,000 and the probable cost of completion of all the plans of the work is about $300,000.

Photograph by F. H. Nowell.

PUMPING PLANT AT MOUTH OF DEXTER CREEK.

This view shows part of the Seward Peninsula Mining Company's ground.

The Field of Endeavor

TOWNS AND MINING CAMPS—SCHOOLS, CHURCHES AND SOCIETIES—TELEPHONES AND RAILROADS—INITIATIVE OF DREDGE MINING.

THE towns and mining camps of Seward Peninsula are the best evidence to the cursory observer of the resources of the country, and the extent to which they have been developed. Facilities for the transaction of business which these towns possess, the public utilities which enterprising citizens have constructed, the churches and schools, the societies and clubs, the substantial character of the buildings—all these indicate a country possessing permanency and producing wealth.

Nome is the principal town of the peninsula. Other towns which have grown out of the swaddling clothes of mining camps, are Council City, Solomon, Dickson, Teller, Candle City and Deering. There are numerous mining camps, some of them being post-offices which are designated by titles of city or town. The trading posts are bases of supplies for the miners operating in territories adjacent to them. Among these are Bluff, Cheenik, White Mountain, Sullivan City, Lane's Landing, Marry's Igloo, York and Tin City. There are road-houses at convenient distances on all the principal trails.

Council City is second in importance of the towns of the peninsula, and is the seat of the recorder's office for the Council District. It is situated on the northern side of Neukluk River about ten miles from its confluence with Fish River, and inland from Cheenik about sixty miles. It has been built on a bench of the stream which forms a natural town-site, furnishing splendid drainage and being of such elevation as to secure safety in case of high water and ice gorges for which the Neukluk is noted. When the town was first established it was in the midst of a spruce forest, but construction of buildings and the need of fuel have caused the destruction of the surrounding timber, until the clearing in which Council City is situated has become so large that available timber is no longer near at hand.

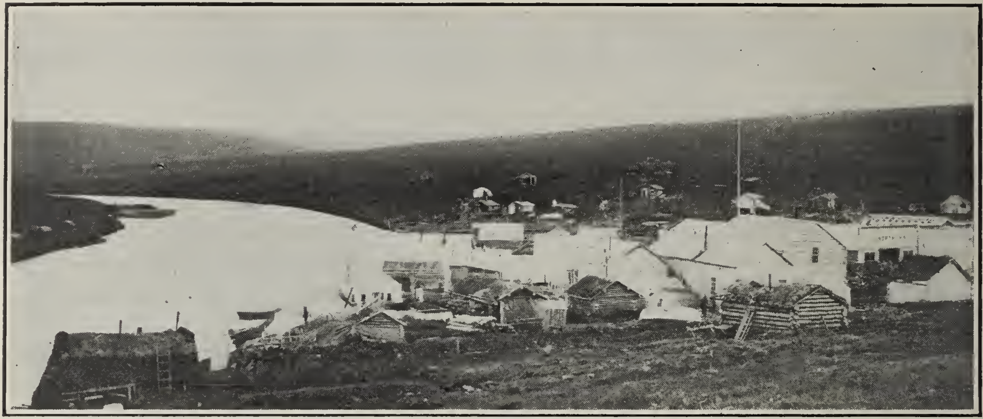
The population of Council City in the winter time is about 600. The town has two churches, a Presbyterian and a Catholic; a public school, and Camp No. 11 of the Arctic Brotherhood, a Northland fraternal order. The business establishments during the winter of 1903-04, consisted of seven stores, two hotels, two hospitals, one drug store, one lumber yard and eleven saloons.

Solomon is a seaboard town, at the mouth of Solomon River, thirty-five miles east of Nome. It is the base of supplies for the Solomon River country, comprising the region drained by the Solomon River and its tributaries, an area of probably 100 square miles. Solomon has a population in the winter season of about 150. It has three stores, four hotels and the usual quota of saloons.

Dickson, just across the river from Solomon, is the seaboard terminal of the Council City and Solomon River Railroad. The main offices of the company are located here, and a town-site has been laid out upon which a number of buildings have been constructed.

The town of Teller is situated on Grantley Harbor. It was named after Senator Teller, in recognition of his services in behalf of the measure for the introduction of domestic reindeer in Alaska. This town is the site of the first reindeer station established in Seward

Peninsula. Teller has the distinction of having the best harbor of the peninsula, but this harbor has the disadvantage of not being open for navigation so early in the season as the roadstead at Nome. Grantley Harbor is, however, the only natural harbor on the northern coast of Bering Sea. Golovin Bay furnishes good harbor facilities for vessels of light draft.



Photograph by F. H. Nowell.

CANDLE CITY, FAIRHAVEN DISTRICT.

Teller is a small place with a permanent population of not more than fifty. It has, however, stores, hotels and saloons. The Northwestern Commercial Company has a branch store at this place. The development of the surrounding country will contribute to the growth of Teller.

A survey has been made for a railroad between Nome and Teller. In the early days of Nome, it was believed by the promoters of this enterprise that freight could be landed at Teller, on account of the superior harbor facilities, and reshipped by rail to Nome at a lower cost than it could be landed from vessels in the roadstead at Nome by means of lighters.

Candle City is a town that grew up as a result of the discovery of gold on Candle Creek. This discovery was made in the fall of 1901, and in the fall of 1902 there were 300 or 400 people in Candle City. There are not so many there today. In appearance the town is a typical mining camp built of logs obtained from the spruce forests on the Kewalik River, fifteen miles or more above Candle City. The difficulty of getting supplies

Photograph by F. H. Nowell.

DEERING, ON KOTZEBUE SOUND.

to Candle City makes the price of all commodities high. In the matter of the cost of living it is also a typical mining camp.

Deering is located on Kotzebue Sound and is the distributing point for the mines of Inmachuk River, Kugruk River and Candle Creek.

Photograph by F. H. Nowell.
MARY'S IGLOO, KOUGAROK DISTRICT.

Mary's Igloo is the seat of the recorder's office of the Kougarok District. It is also a postoffice, and the most important station of this great inland mining district. It derives its name from an Eskimo woman whose igloo was, in the early days, the principal feature of the place.

Cheenik, misspelled by the Board on Geographical Names at Washington, is on Golovin Bay, and one of the oldest stations of Northwestern Alaska. A Swedish mission and school is established here. John Dexter, way back in the eighties, established a trading post here. Cheenik means tea-kettle, and is derived from the Russian chy, meaning tea.

White Mountain is a base of supplies for the Wild Goose Mining and Trading Company. Bluff is a little town near the mines of Daniels Creek. There is a mission at Cape Prince of Wales, and a native village known as Kingegan. Hugh J. Lee is missionary and superintendent of the reindeer station, which is situated here. O. J. Rognon is the teacher of the Government school. There is a postoffice here designated by the name of Wales.

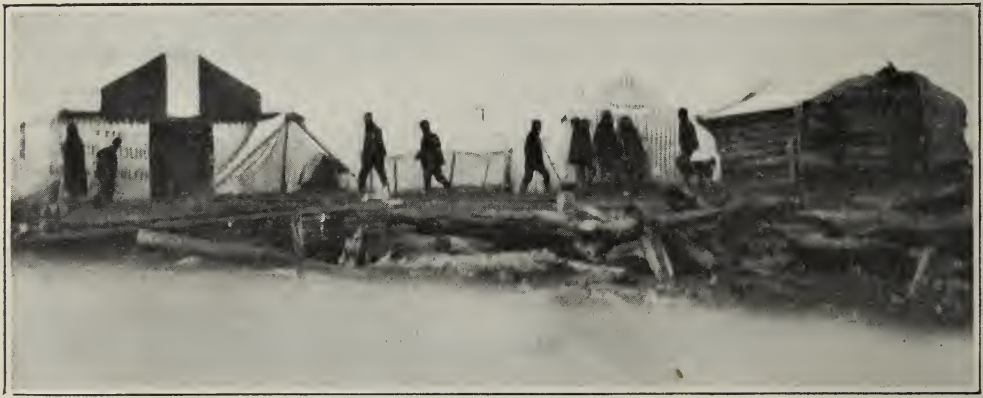
York, Tin City and Providence are camps in the tin region. In 1900 York was a

Photograph by F. H. Nowell.
CAPE YORK—THE TIN REGION.

place of considerable importance. It was believed then by some people that it would be a rival of Nome, but the creeks upon which it was dependent failed to be producers, and the place is now only a village of half a dozen people.

This hasty sketch of the lesser towns and mining camps of Seward Peninsula is not complete, but is introduced here to show the fact that the people who have gone to this country have gathered in little communities in various parts of the peninsula, and are busy at the work of developing this country. The number of these towns and camps, widely scattered as they are, show that the precious mineral has been found in different localities where they are situated. This idea will convey to the reader a conception of the widespread distribution of the placer gold in the gravels of Seward Peninsula.

Photograph by F. H. Nowell. SULLIVAN CITY.

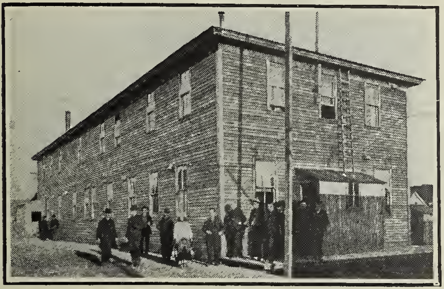


Taken June 27, 1899, by Mrs. J. D. Leedy.
THE FIRST PICTURE OF NOME.

NOME.

A census of Nome taken in the winter of 1903-04 shows a population of 3,185 people. In 1900 it is estimated that 18,000 people landed in Nome, but there never has been such a rush in any subsequent season. The number of people that have gone to Nome every spring during the past two years is about 4,000. As most of these people engage in mining, they stop in Nome only long enough to make preparations that are necessary for their summer's work. The population of Nome in the summer season may be estimated at between 4,000 and 5,000.

Nome is built on the tundra at an elevation of from twenty to fifty feet above the sea. Some of the buildings come down to the water's edge. The great storm in the fall of 1900 destroyed a large number of buildings that were constructed too close to the sea. The tundra back of the beach, upon which the greater part of the town is situated, is about the worst spot that could have been selected for a town-site. In the early days the streets were almost impassable, and it has been only by persistent ditching, draining and graveling the streets that anything like passable thoroughfares have been secured.



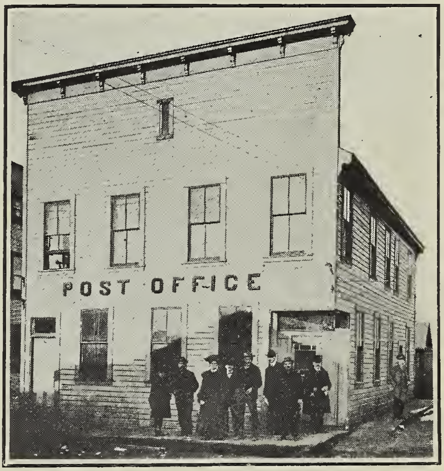
Photograph by F. H. Nowell.

FEDERAL COURT HOUSE.

Nome is built along the beach a distance of a mile or more. The main street and a few other streets are planked. There are plank sidewalks in the residence part of the town. Most of the business is confined to Front Street. In Front Street there are a large number of suitable buildings in which are stores, banks and offices.

The town has an excellent water supply, being provided with water from Moonlight Springs at the base of Anvil Mountain, by means of a conduit from the springs to the town. Of course, this water supply is shut off in the winter time on account of the frost, but in the summer season the water furnished to the residents of Nome is equal to the water furnished to any town in North America. In the winter season water is obtained from Snake River and Dry Creek by cutting holes through the ice, and is peddled through the town by water vendors. The Moonlight Springs water works is owned by the original members of the Pioneer Mining Company, Lindeberg, Lindblom, Brynteson and Kjelsberg.

Nome has an electric light plant which supplies light to all the stores, hotels, saloons and other places of business, and to many private residences in the winter season. In the summer time there is very little need of artificial light. The electric light plant is owned by Jafet Lindeberg, president of the Pioneer Mining Company, and is managed by Mr. J. J. Cole.



NOME POSTOFFICE.

Nome has a telephone system, and long distance lines connecting Nome with Council, Cheenik and intermediate points, Kougarok and Teller, constructed by A. E. Boyd. The entire system comprises more than 250 miles of wire. It is reported that the line will be extended from Cheenik to Unalakleet, connecting with the United States government telegraph line. This connection will make the wireless telegraph between St.

Michael and Safety unnecessary. The distance between Nome and Unalakleet is 240 miles.

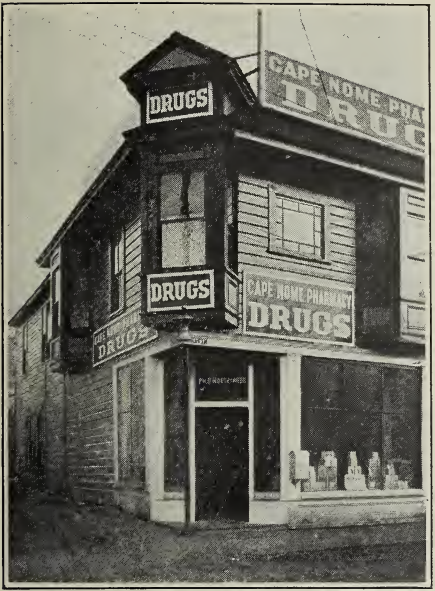
Mr. Boyd, who is an enterprising citizen and tireless worker, deserves commendation for the excellent service which he has established between Nome and the mining camps on the water-shed that drains into Bering sea. The telephone is a great time-saver to miners forty miles or more from a base of supplies who may need something indispensable to their work. The lines from Nome to Kougarok and Teller were constructed last winter.

Nome has two public school buildings, one situated near the Federal Court building and another on the sandspit in the part of Nome on the west side of Snake River. The main school building contains five school rooms. This school is modern in equipment and the curriculum embraces the courses of the primary department, a grammar school and a high school. It is under the supervision of Professor D. H. Traphagen, a capable and an experienced educator. The number of children attending school in Nome is about 200. There is also a night school under the supervision of Professor Riley. Many grown-up people, most of them of foreign birth, attend the night school.

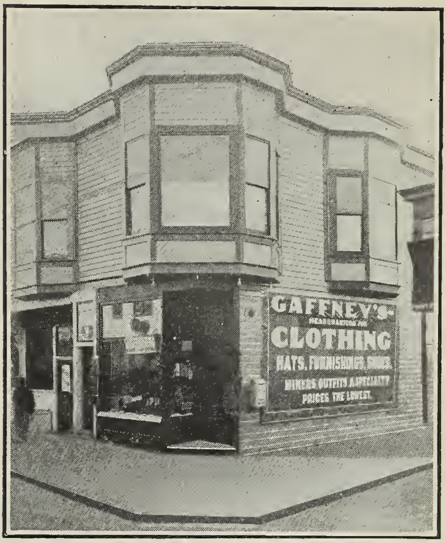
There are three churches in Nome, designated in the order in which they were established: Congregational, Episcopal and Catholic.

The Eagles have an aerie and the Arctic Brotherhood has a camp at Nome. Each of these orders owns a building provided with a club room and an assembly hall. The Masons, Knights of Pythias

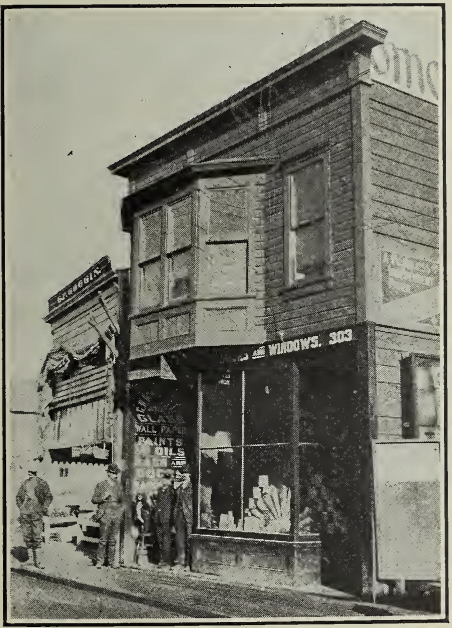
"The School-master is abroad, and I trust to him, armed with his primer, against the soldiers in full military array."



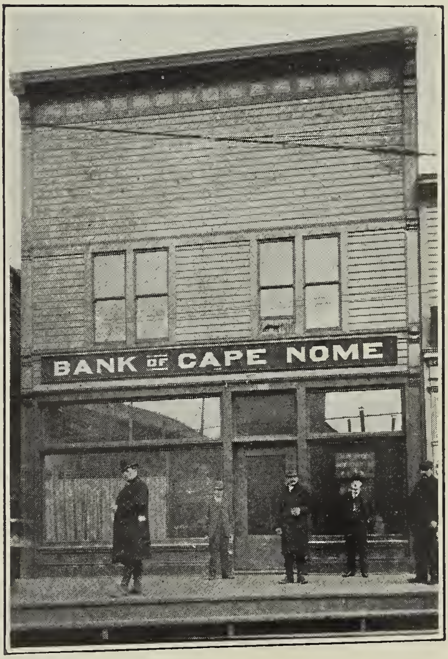
Ph. P. Moeszinger's Drug Store, the largest in Alaska



J. C. Gaffney's Store.



Where G. H. Wintermantle sells Paints and Oils



The Bank of Cape Nome.

BUSINESS BLOCKS IN NOME.

and Odd Fellows have clubs composed of members of the orders from various parts of the world. During the summer of 1904, the Masons applied for a charter for a lodge and the dispensation was granted. A charter membership roll had been signed, and at the close of navigation the Masons of Nome were likely to effect an organization. They have planned the erection of a temple, which will be unique, composed of materials furnished by this country. They have also selected a uniform for the Knight Templar degree which will be made of furs, and will also be unique.

Congregational Church

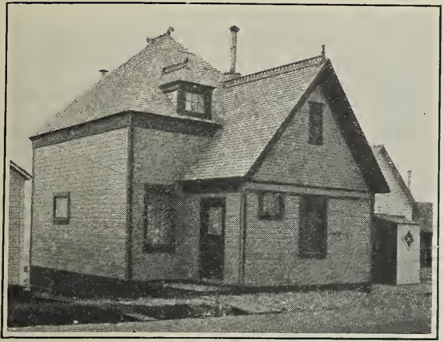
The men of Nome have their fraternal orders, societies and clubs; and it will at least interest the women readers of this volume to know that the women of Nome have a club and have affiliated with the General Federation of Women's Clubs in the United States.

The Kegoayah Kozga is a strong organization, comprising a membership of more than fifty women of Nome. The name has been taken from the Eskimo language, Kegoayah, meaning the aurora, and Kozga, meaning club. This organization was effected by the untiring and enthusiastic work of Mrs. Josephine Scroggs, wife of a Presbyterian minister who was stationed at Nome in 1901-02. At the close of the first year, the club had a membership of forty-eight, and while there has not been a large increase in the membership, much useful and helpful work has been accomplished. The club owns its own home on Steadman Avenue. Meetings are held regularly and a course of work is mapped out and scrupulously followed. As Nome is so far away from lecture bureaus and traveling libraries, and as the town is deprived of communication, during seven months of the year, with the great, busy world in the states, except by telegraph, or the slow tedious means of transportation provided by dog teams, the members of the club have an excellent opportunity to make the most of the material at hand, as well as an opportunity to draw upon their own resources in the lines of intellectuality and art.

Catholic Church

It is creditable to the women of Nome that they have made their club a great success. It has been helpful to them, giving them a broader idea of life, a better knowledge of history, literature and art; it has furnished employment for long winter evenings, and the members have shown their financial ability by purchasing a home for the club, paying for it, and having money in the treasury.

Mrs. Frank Hart was the first president of the club. In 1903 she was succeeded by Mrs. Charles S. Johnson. In 1904, Miss J. M. Todman discharged the duties of

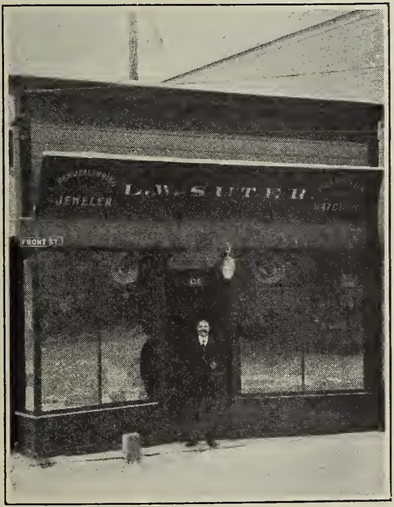


Residence of Ira D. Orton.

A. J. Lowe's Home.

Tony Polet's Store

John Tesack's Cottage.

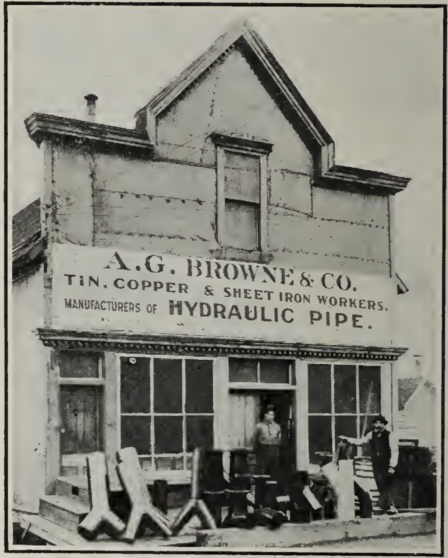


L. W. Suter's Jewelry Store.

Office of Pioneer Mining Co.

RESIDENCE AND BUSINESS HOUSES IN NOME.

president. The officers selected for 1905 are as follows: Mrs. M. C. Emerson, president; Mrs. T. M. Reed, first vice-president; Miss Helen Kimball, second vice-president; Mrs. M. J. Cochran, secretary; Mrs. R. N. Simpson, treasurer. The board of managers are: Mrs. M. C. Emerson, Mrs. T. M. Reed, Miss Helen Kimball, Mrs. M. J. Cochran and Mrs. R. N. Simpson.


A.G. BROWNE & CO.
TIN, COPPER & SHEET IRON WORKERS.
MANUFACTURERS OF HYDRAULIC PIPE.

Largest Hydraulic Pipe Factory in Alaska.

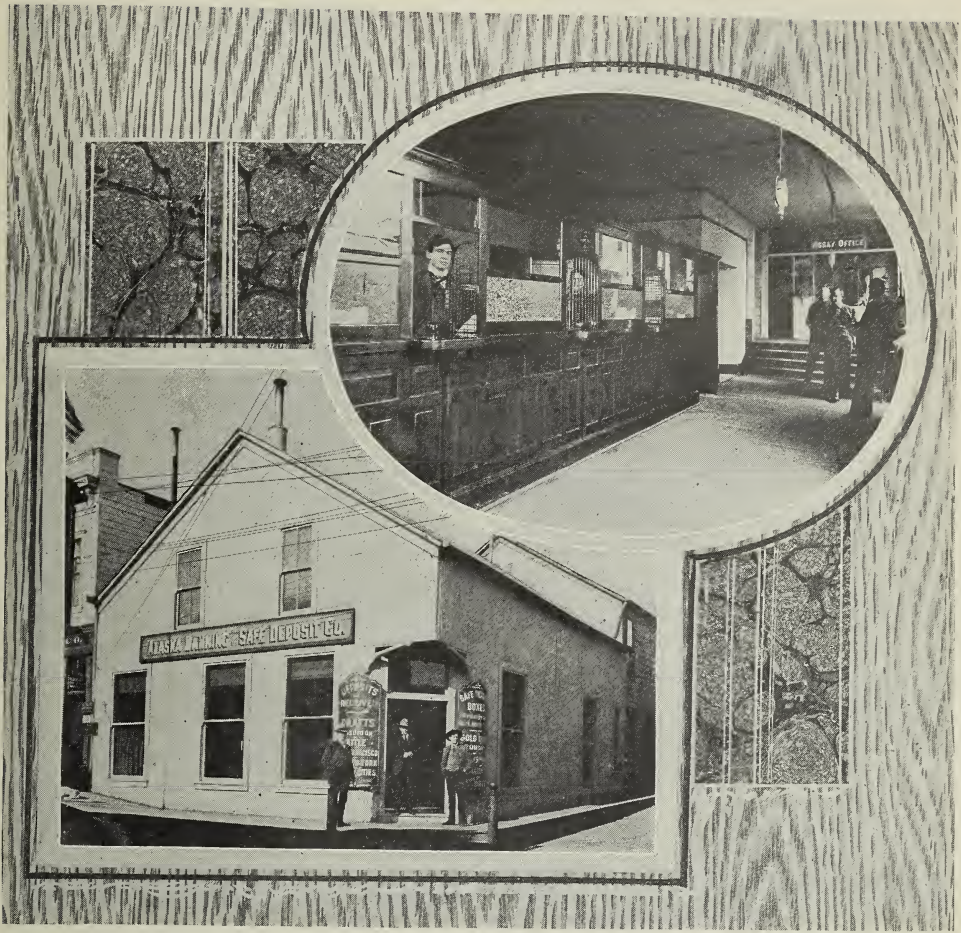
Nome has three newspapers, two published semi-weekly and one weekly. The "Nugget" of which J. F. A. Strong is the editor and proprietor, is published on Wednesdays and Saturdays. The "News," owned by the News Publishing Company, Will A. Steel of Seattle, being the principal stockholder, is now edited and published by Ralph Reber. It is issued on Tuesdays and Fridays. Both of these papers are six-column folio, but the sheets are enlarged to seven-column in the summer season on account of the increased volume of business. The "Nome Gold Digger" is owned and published by S. H. Stevens. This paper is issued weekly, Thursdays being publication days.

In the matter of banks Nome is well provided. There are three banking institutions in the town, and each of these banks is equipped with an assay office, the purchase of gold being one of the leading features of the banking business in Nome.

The Alaska Banking and Safe Deposit Company was organized under the laws of the state of West Virginia, with a capital stock of $125,000, and began business in Nome in 1900. Its officers are, Hon. H. A. Taylor, Assistant Secretary United States Treasury, president; George E. Roberts, director of the mint, vice-president; E. C. Robinson, of Washington, treasurer; Dr. Cabell Whitehead, general manager; F. H. Thatcher, cashier; Eugene Ailes, assayer. Deposits in this bank have been as high as $750,000. It has fire and burglar proof vaults and deals extensively in gold bullion. The purchase of gold bullion during the open season of 1904 amounted to $1,500,000, $200,000 more than it had been in any previous season.

The bank of Cape Nome was also established in 1900 by Seattle capitalists. James D. Hoge, the well known Seattle banker, is president of this institution, and N. B. Solner, who is also cashier of the Union Savings Bank of Seattle, is the manager of the Bank of Cape Nome. This bank does an extensive business, having a large clientage, and has done its share in the sphere of banks toward the development of this country. It has a capital stock of $100,000 and occupies a modern building recently constructed by the bank corporation for its own use.

The Miners and Merchants Bank of Nome was organized last fall with a capital stock of $100,000, most of which was subscribed by miners and merchants of Nome. Eugene Chilberg, treasurer of the Pioneer Mining Company, is the president of this bank



Photograph by B. B. Dobbs.

ALASKA BANKING AND SAFE DEPOSIT CO.

and C. G. Cowden, formerly cashier of Alaska Banking and Safe Deposit Company, is the cashier of the new institution. This bank starts out under very favorable auspices.

SEWARD PENINSULA RAILROADS.

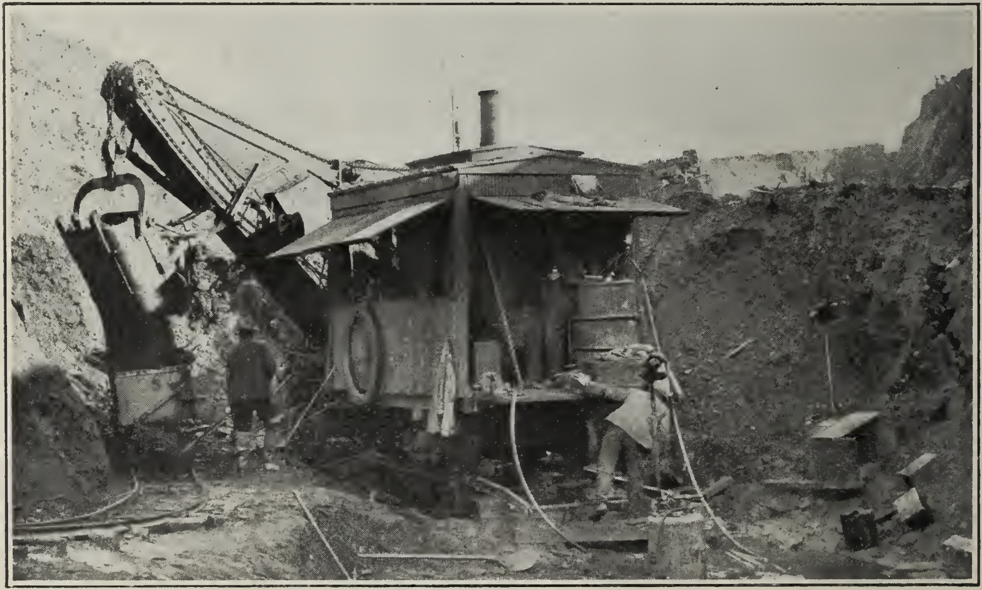
Seward Peninsula has thirty-five miles of railroads in operation. The Nome-Arctic Railroad Company has a narrow-guage line between Nome and Anvil and Dexter Creeks. This line was constructed by the Wild Goose Mining and Trading Company from Nome to Anvil Creek in 1900. It has since been extended up the left limit of Anvil Creek across the divide between Anvil and Dexter Creeks to the southeastern base of King Mountain overlooking Nome River. The terminal is ten miles from Nome. This road is pointing toward Kougarok District and may be extended to this part of the interior of Seward Peninsula as soon as the traffic justifies the construction of the road-bed.

The Council City and Solomon River Railroad is a standard-guage line planned to connect Solomon with Council City. The line has been constructed and equipped to East Fork, sixteen miles from Solomon. This road has its shops and offices, which are of a subtantial character, at Dickson, the seaboard terminal of the road just across the river from Solomon. This railroad has been constructed in a substantial manner with a view to permanency and future operations. The road-bed is level and ballasted, and all the work both in construction of the road and in the construction of the company's buildings shows painstaking care and the intention to secure lasting results. There is material on the ground to complete the road from its present terminal to Council City.

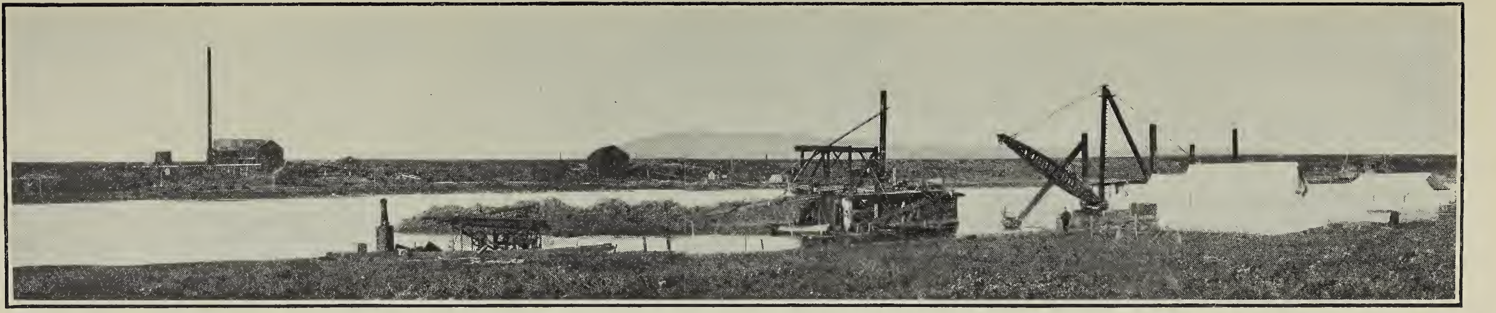
The Wild Goose Mining and Trading Company has a railroad in operation between Council City and No. 15 Ophir Creek. This road was constructed to accommodate the traffic of the company, but it has proved to be a great convenience to other operators on Ophir Creek. The line is seven miles long. It is a narrow-gauge road, the kind best adapted for short hauls in Alaska.

THE INITIATIVE OF DREDGE MINING.

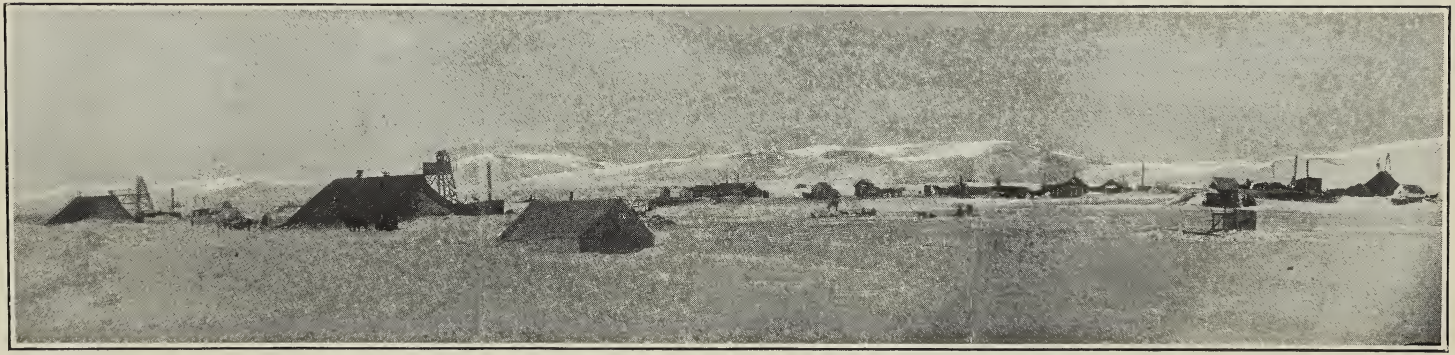
The dredger and steam shovel are destined to perform an important part in the mining operations of Seward Peninsula. The work heretofore done by these methods has not been extensive, and has been in a measure experimental. This work has demonstrated, however, the practicability of this kind of mining. Major L. H. French took the first steam shovel to Northwestern Alaska and used it successfully on No. 5 Anvil Creek. Work with dredgers has been conducted in a desultory sort of way since the season of 1900. Last year Mr. C. A. Ferrin, manager of the Northern Mining and Trading Company, operated a dredger on Solomon River, and the result of his work was very satisfactory. Last season William Johnston, of Chicago, a mining engineer of wide experience and recognized ability, built a large dredger on Snake River opposite the Wild Goose Mining Company's pumping plant. This dredger will be operated this season. Mr. W. L. Leland, of the Miocene Ditch Company, has shipped a large dredging plant to Solomon to be used in mining some of the gold-bearing gravels of Solomon River. Another large dredging



Photograph by B. B. Dobbs.
THE PIONEER MINING COMPANY'S STEAM SHOVEL.



VIEW OF SNAKE RIVER, SHOWING WILD GOOSE PUMPING PLANT AND W. M. JOHNSTON'S DREDGER.



BROWNVILLE ON LITTLE CREEK. EXTRAORDINARY VALUES IN THE DUMPS SHOWN IN THIS PICTURE.

plant will be installed on Nome River near the mouth of Dexter Creek. This plant is the property of the Seward Peninsula Mining Company, of which W. C. Wilkins is the general manager. The dredger has a capacity of 3,000 cubic yards of gravel every twenty-four hours. It will be installed at a cost of $90,000. The company owns sixty-four mining claims, containing 1,280 acres, situated on Nome River, extending a distance of four miles and three-quarters up the stream from the mouth of Dexter Creek.

If the work done by these dredgers this season meets the expectations of the operators, this kind of mining in Seward Peninsula will receive a decided impetus, and result in more extensive mining by this method.

There is little doubt that large areas of the country may be successfully mined by dredgers. The greatest impediment to successful operations of this character is frozen ground, and, as I have elsewhere remarked, the frozen condition of the earth in the Northland is the most serious problem to be solved by the mining engineer and operator. Otherwise the Nome District should present ideal conditions for dredge mining. Most of the bedrock is mica-schist and much of it is partially decomposed. A miner will readily see that this condition furnishes better opportunities for work with a dredger than a bedrock composed of hard limestone.

THE WILD GOOSE MINING AND TRADING CO.

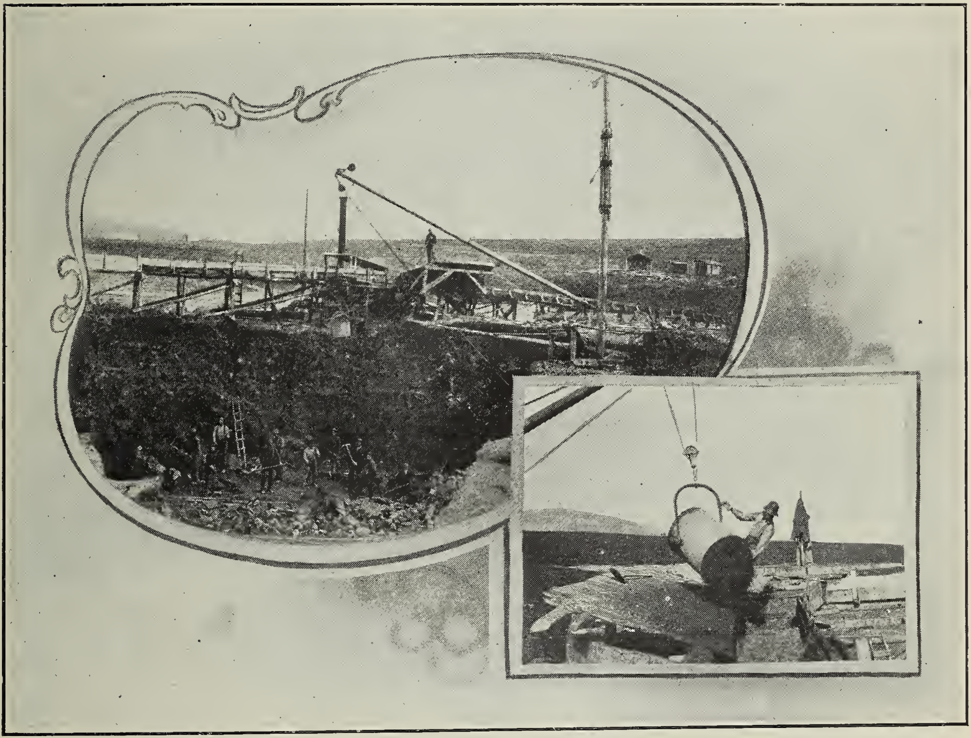
The best evidence of what may be accomplished by intelligent methods and the exercise of business sense is shown by what has been done by some of the prominent companies of this country. Notable and pre-eminent among these companies is the one that was promoted, organized and managed by Charles D. Lane, who has been a quartz and placer miner for more than half a century. He is not only a miner but the possessor of that uncommon attribute known as common sense. Under his direction and through his management, the Wild Goose Mining and Trading Company has become one of the best dividend properties in all Alaska.

As is usually the case with companies that are organized and operated for the purpose of paying dividends, where no stock is for sale, it is difficult to obtain information from the company about its affairs and plans. What I shall say in the following lines may not be absolutely accurate, but it is very near the truth, near enough to illustrate the idea which prompts me to tell this story, and that idea is thus: Capital wisely invested in the mines of Seward Peninsula and intelligently managed by people who are practical miners and capable business men, will yield splendid returns.

When Mr. Lane visited Kotzebue in the fall of '98 his knowledge of mines and mining permitted him to see the great future in store for Seward Peninsula. Although a man of wealth he foresaw the need of greater capital than he possessed. He organized the Wild Goose Mining and Trading Company with a capital of $1,000,000. The stock was subscribed by Mr. Lane and a few of his San Francisco and Baltimore friends. The million dollars derived from the sale of this stock was invested in Seward Peninsula mining property. This company has acquired all of its property by purchase. The company's holdings are principally on Ophir Creek, in the Council District, and on Anvil Creek in the Nome District. Work was mapped out and improvements were planned whereby water could be made available for the extensive operations necessary to make an undertaking of this character successful.

Up to the beginning of the mining season of 1904, the Wild Goose Mining and Trading Company had taken out of the ground more than $3,000,000, but had not declared a dividend. All of this vast sum of money had been re-invested in new properties and improvements. The big ditch on Ophir Creek costing about $400,000, the gigantic pumping plant on Snake River near Nome, forcing the water to the summit of Anvil Mountain, costing not less than a third of a million dollars, probably more, the railroad from Nome to Anvil, and the railroad from Council City to No. 15 Ophir Creek represent the principal improvements. The company's property on Ophir Creek is between seven and eight miles long, so it will be seen that its interests are extensive, and that the improvements that the company has made are of great magnitude and have cost a lot of money.

During the season of 1904, the company mined gold dust valued at more than a million dollars, and at the close of the season all outstanding indebtedness, amounting to about $400,000, was liquidated and a dividend of thirty per cent, aggregating $300,000, was declared. The assets of the company at present and the prospect for the future are these: The company owns property in which, at a conservative estimate there are fifteen millions of dollars in sight. Most of the improvements which are necessary for the economical working of this property have been made. The company is out of debt and stockholders have received thirty per cent. of their original investment back in one dividend. The company with its present facilities and property will extract a million dollars a year for many years, and the total expense of all operations should not be more than thirty per cent., probably much less.



HOISTING PAY GRAVEL WITH A DERRICK.

This is a very successful enterprise, and the credit is due to the man who acquired these holdings for the company, and whose intelligent management has made the Wild Goose

Mining and Trading Company the owner of the most valuable property of Seward Peninsula.

THE PIONEER MINING COMPANY.

The original discoverers of the Nome gold fields formed a co-partnership which they designated as The Pioneer Mining Company. This term in its application to the company is absolutely correct, as it is the first mining company composed of the first miners operating in this country. At a later date, in the year 1901, the Pioneer Mining Company was converted into a corporation bearing the same name. Jafet Lindeberg was selected as president, Erik O. Lindblom, vice-president, J. E. Chilberg secretary and Eugene Chilberg treasurer. These officers have been re-elected at each succeeding meeting, their stewardship having been entirely satisfactory to the stockholders of the company. This company has taken out of the Nome country gold dust valued at not less than $4,000,000. The company's holdings are very extensive, comprising claims on a large number of creeks in the Nome district and claims in other parts of the country. The company also owns a large interest in the Miocene Ditch and is intimately associated with transportation interests on the peninsula; and the original members of the company own the water works at Nome. The company is also the owner of the large pumping plant constructed by J. W. Kelly in the Nome country. In short, the campany's holdings are extensive, varied and valuable.

STORE AND WAREHOUSE OF BEAU MERCANTILE CO.
One of the Substantial Business Houses of Nome.

Other Points of View

WHILE the Nome region is bare and uninteresting in general physical appearance, Seward Peninsula is not entirely devoid of scenic features. The coastal plain or tundra and the unforested hills which lie immediately beyond it are neither interesting nor attractive to look at; but back in the mountains are rugged peaks, precipitous canyons and many pretty mountain lakes.

Salmon Lake, fifty miles from Nome, lies at the base of the Sawtooth Mountains and looks like a great pair of spectacles; its clear waters reflecting the high peaks make a pretty and an interesting picture. The waters of Canyon Creek in the Port Clarence district are as blue as the Rhone in Switzerland. This stream for a distance of a mile and three-quarters is thirty feet or more wide and very deep, clear as crystal so that the white sands at the bottom are as plainly visible as the white sands that mark its shores. By following any of the streams of this water-shed to their source, the traveler will encounter many charming bits of scenery. But it is not scenery that attracts people to this part of the northern country. It is the gold that is in the ground, and the other valuable minerals that have been discovered, and reference is here made to some of the scenic features in order to do the country justice from another than commercial point of view.

Other features of this country, not possessing present commercial or economic value but having a prospective value, are the hot springs which have been found in a number of places. There are hot springs in the Shismareff country, others on the Kougarok River, others on the Inmachuk River and yet others on Reed River, a tributary of the Kobuk. It is claimed that the waters of these hot springs contain minerals possessing medicinal properties. Wherever they have been found they possess the property of counteracting the influences of winter in their immediate vicinity. The Inmachuk River is kept open a distance of four miles all winter long by the hot springs. The volume of water that issues from these springs is very large and temperature must be pretty high when this water can flow a distance of three or four miles before congealing when the thermometer is thirty or more below zero. The same conditions prevail at the hot springs on the Kougarok and those of the Shismareff country.

From a description which has been given me of the Reed River Hot Springs, they must be very extensive and very remarkable. Reed River is a tributary of the Upper Kobuk 150 miles above Shungnak, the latter stream being the place where the first Kobuk gold placer deposits were found. There is a trail up Reed River across to the Noatak thence over to the Colville country. The hot springs are near the source of Reed River. There is a zone here three miles or four wide and several miles long which never wears a winter garb. The highest temperature of the waters of these springs from tests made by Mr. Bernhart, is 110 degrees F. Winter travelers in this country say that the vicinity of these springs is like an oasis in a desert.

To any person who fully comprehends the vast mineral wealth of Northwestern Alaska, it is not a flight of imagination to assume that the time may come when some of these hot springs will be winter resorts for the weak or ailing of the many thousands of

A HERD OF DOMESTICATED REINDEER.

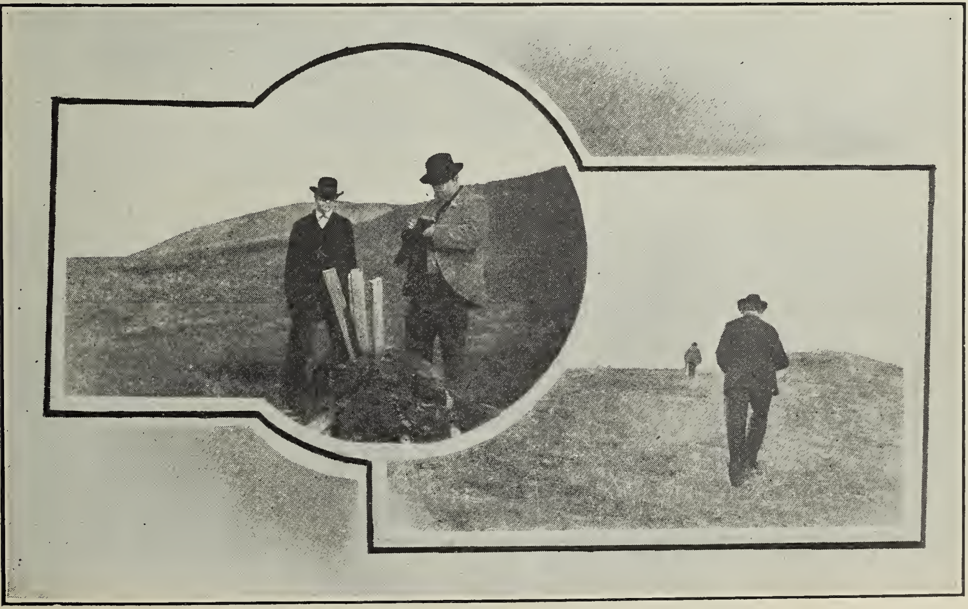
Photograph by B. B. Dobbs.

people who are destined to be inhabitants of this country.

There are but little possibilities of agriculture in this part of Alaska. I have seen hay cut and cured in the vicinity of Nome. It was made of wild grasses. It wasn't very good hay but was better than none at all. In Nome vegetable gardens have been cultivated successfully, but any kind of agricultural work, in order to be successful must be done on a very small scale and with great care and pains.

I do not believe that the agricultural resources of Alaska north of the Yukon Valley are worth serious investigation, but there are some possibilities in the line of stock raising. The Government has demonstrated during the past several years the practicability of the reindeer industry in Alaska. On Seward Peninsula there are vast areas of reindeer moss or sphagnum, which is the natural food for the reindeer. In brief, there is natural pasturage here for hundreds of thousands of these animals. They do not require any other kind of food and this moss does not have to be cut and prepared for winter use. The reindeer browses at leisure during the summer season, but in the winter he is compelled to work for his food. It is an interesting sight to see reindeer digging and burrowing in the snow in search of their daily meal. If this region is to become a populous country, I can see no reason why the reindeer business should not be a profitable industry as a private enterprise. People in this high latitude eat more meat than the people in warmer climates, and reindeer meat is sweet and wholesome. A full grown reindeer weighs from 150 pounds to 200 pounds. The present price of meat is from fifty cents the pound to seventy-five cents the pound. The cost of rearing reindeer is practically nothing. He procures his own living from the time he is born. The only expense is the expense of herding. They multiply very fast and in this country they are comparatively free from disease. Mary Antisarlook,

GATHERING WILD FLOWERS ON THE TUNDRA.



STAKING A MINING CLAIM.

Nome-Arctic Railroad.

known as "Mary the Queen of the Reindeer," is the widow of Charley Antisarlook, who was one of the first fortunate natives to receive reindeer from the Government. The increase of this herd has given to his widow 300 deer. She is the richest Eskimo on Seward Peninsula.

I see but one difficulty in prosecuting the reindeer industry as a private enterprise, and that is the difficulty of obtaining original stock since the Russian Government has declined to permit the exporting of any more deer from Siberia. But the pasturage is here, the opportunities are here for the growth of this industry, provided this country becomes populated by the many people that will be required to develop the mineral wealth of this part of Alaska.

The reindeer is a very useful animal to the Eskimo. Every particle of his flesh is used for food and his skin is used for making clothing. Reindeer skins also make nice rugs and are worth from two dollars to four dollars in the market at Nome.

Aside from the mineral wealth of Northwestern Alaska, the development of the fish industry, small amount of revenue derived from furs and the possibility of the reindeer industry, I fail to perceive at this day and writing any other resources which the country possesses.

Preparing to Plant a Garden.

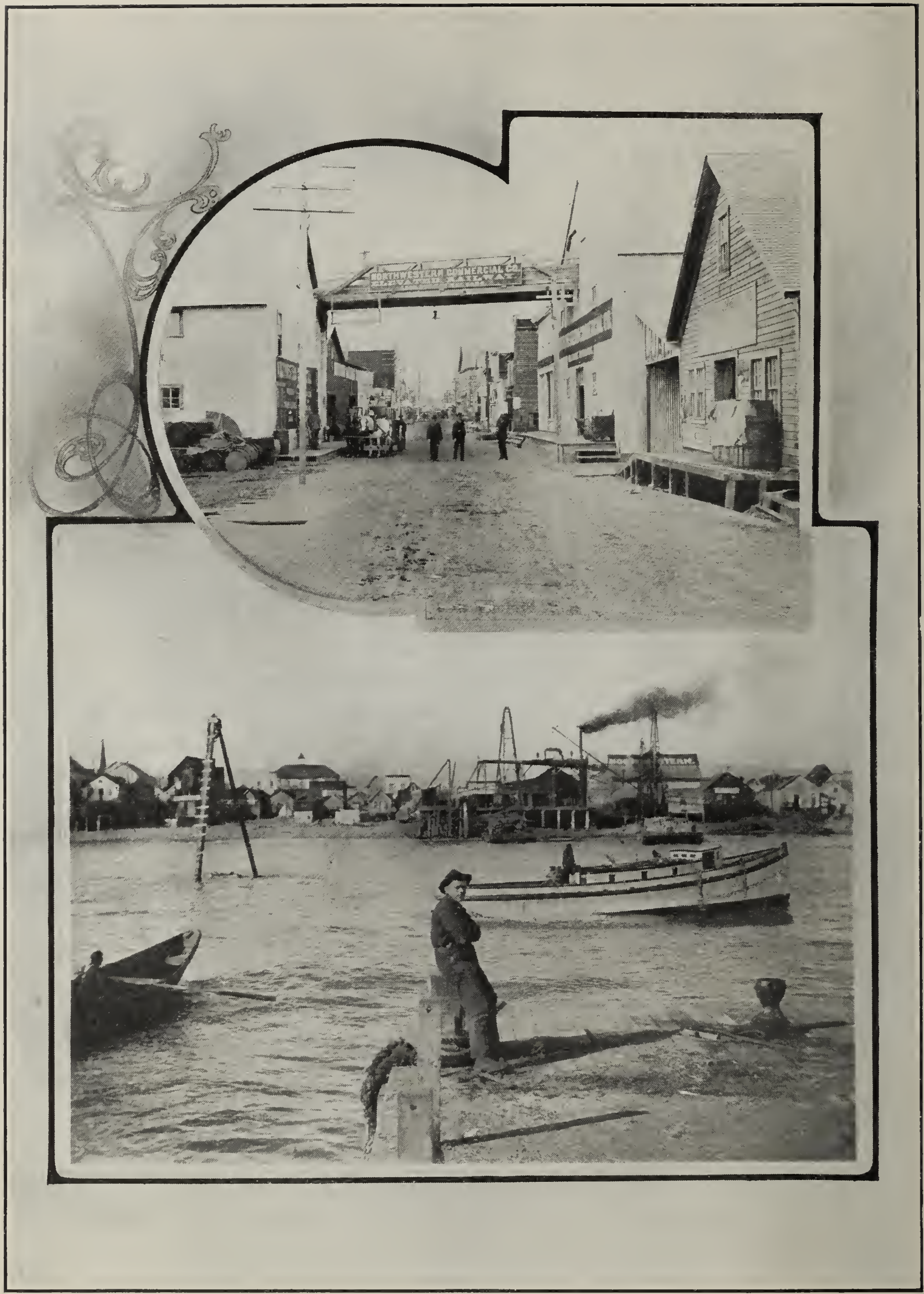
SNOWFLAKE MINE ON DEXTER HILL.
Owned by Captain Carlson and Ed. Dunn, Jr.

Nome's Commerce

SIX years ago the only vessels that touched at points of Seward Peninsula were whalers and an occasional schooner engaged in trade with the natives. This year the commerce of Nome requires fourteen steamers having an aggregate tonnage of 25,000 tons and several schooners that are capable of carrying 5,000 tons every trip. Most of the steamers make from four trips to six trips in a season. In 1901 more than 150,000 tons of freight were landed on the beach at Nome, and 15,000 people accompanied these miscellaneous and heterogeneous cargoes. No such a volume of freight nor such a number of people has been transported in any of the succeeding seasons. In 1902 the cargoes landed at Nome and Solomon aggregated near 70,000 tons; but this included material for the Council City and Solomon River Railroad, which was near 20,000 tons. In 1904 the shipments to the Nome country were more than 80,000 tons. In all probability the shipments for the season of 1905 will exceed this quantity, as a great deal of mining machinery is going into the country.

Seattle, San Francisco and Portland are the principal supply stations of the Nome country. A part of the mining machinery and the material for the construction and equipment of the railroads is purchased in the East, but, with a few exceptions, the food, clothing and fuel for Northwestern Alaska is bought on the Pacific Coast. The foregoing facts furnish the basis for an estimate of the present value of Seward Peninsula to the cities where the larger amount of supplies are purchased. This value will steadily increase with the development of the country. The industries of Northwestern Alaska are in their infancy. There is every indication that there will be an annual increase of the mineral product of this country for many years. Much of the work which has been done during the past two years and much that will be done for the next three or four years is of a preliminary character. The railroads that are building and the ditches that are being constructed are preparations for more extensive mining. The mining of the future, provided with adequate facilities, will be conducted more profitably than it has been in the past. The exploitation of the tin region will add to the mineral wealth and product of this country. With an increase of the mineral product there will be a commensurate increase of commerce.

Seattle being the nearest shipping point in the United States should naturally command the largest part of trade with Nome. The distance from Seattle to Nome is 2,350 miles. The fastest steamers of the Nome fleet make the trip in eight days. Most of the commerce of Nome from the eastern states passes through Seattle. The development of this northern empire of stupendous mineral resources will be a conspicuous factor in the growth and prosperity of Seattle. The far-seeing business men of Seattle recognize this fact have organized a club composed of 700 representative citizens, and having for its object the promotion and encouragement of all legitimate enterprises for the development of Alaska. The Alaska Building, recently constructed in Seattle, is the finest struc-



Photograph by F. H. Nowell.

NORTHWESTERN COMMERCIAL COMPANY.

Store and Warehouses in Nome and a View from the Sea of the North Coast Lighterage Plant.

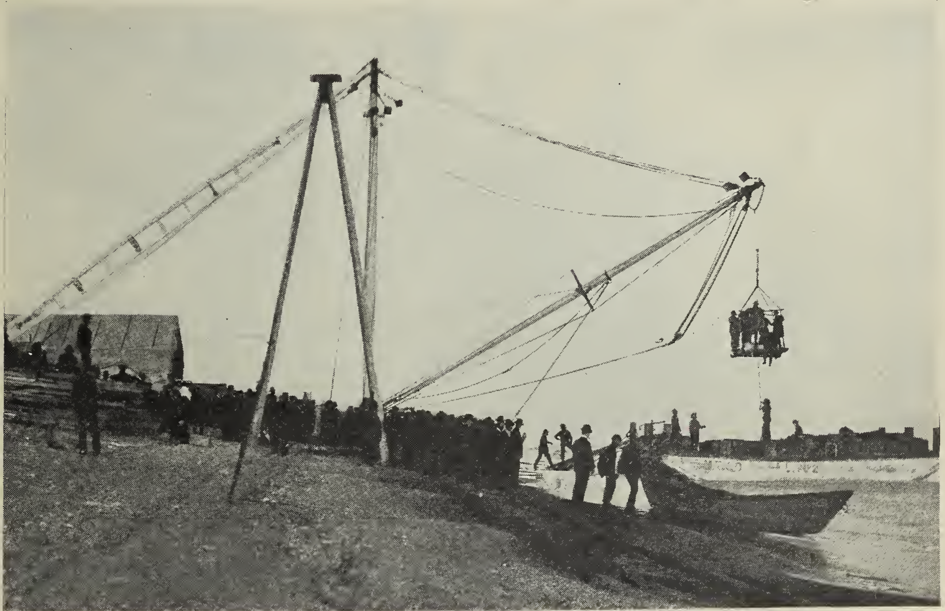
Alaska Building, Seattle.

ture in the city, and it is a prophesy of what the development of Alaska will be to the Queen City of Puget Sound.

This is an appropriate place to mention the fact that the Alaska club has just printed a valuable book of general and statistical information about Alaska. The price of this book is $1 the copy, and it can be had by writing to W. M. Sheffield, the efficient secretary of the club.

HARBOR FOR NOME.

Better facilities for landing and loading freight at Nome will be of material benefit to the commerce of this country. Captain E. W. Johnston, who has been prominently identified with the lighterage business of Nome since 1900, has consummated plans to provide these facilities. Last winter a charter was secured from Congress to permit, under the supervision of the war department, the building of a pier at the mouth of Snake River. The Nome Improvement Company was organized in Oldtown, Me., and $300,000 was subscribed to make a harbor at Nome. The contract for constructing this harbor has been given to Captain Johnston.



Photograph by B. B. Dobbs.

THE JOHNSTON LIGHTERAGE PLANT AT NOME.

The New Harbor Will Change This Method of Landing Freight and Passengers.

The pier will consist of cribs thirty by fourteen feet tapering to twelve feet wide on top. These cribs will be filled with rock from Sledge Island and Cape Prince of Wales. They will be covered two feet above water with edge-bolted timbers, and will extend into the sea a distance of 750 feet from the mouth of Snake River. There will be two parallel lines of these cribs. The distance between them at the mouth of Snake River will be 110 feet. This width converges to eighty feet at the end of the pier, where there will be fourteen feet of water. A breakwater 400 feet long will be built in the sea beyond the pier. Piles will be driven along the easterly side of Snake River, and all the sheds and warehouses necessary for the shipping business of Nome will be constructed on this side of the river.

It is proposed by this enterprise to furnish a safe harbor for all the small vessels at Nome, and a means of reaching the larger steamers during the stress of the worst weather. The cost of lighterage will be reduced, and the danger to life and property on this storm-beaten shore will be lessened.

The Nome Improvement Company is a strong organization, with money subscribed to complete the work undertaken, and ample funds at command to consummate any business plans essential for the success of the enterprise that has been inaugurated. The following gentlemen are the trustees of the company: Herbert Gray, of Oldtown, Me., president and treasurer; C. P. Dam, of Nome, secretary; Mark Reed, of Seattle; George Van Dyke, of Boston; J. G. Gould, of Oldtown.

Photograph by B. B. Dobbs.

OOMIAK, ESKIMO BOAT MADE OF WALRUS SKINS.

The Mint Returns

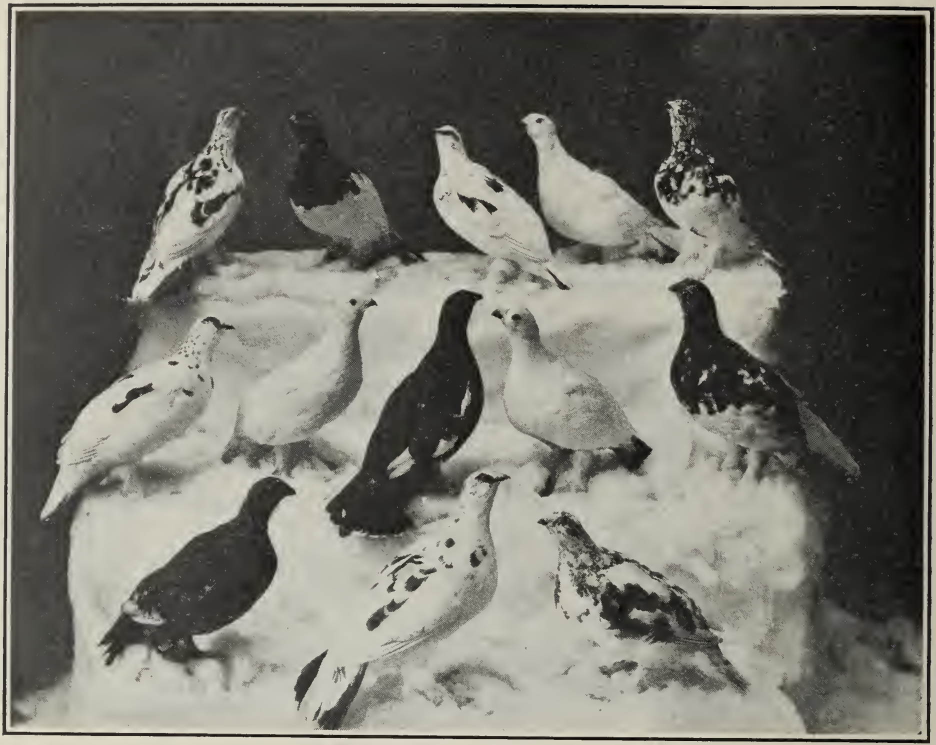
ACCORDING to the mint returns the gold and silver product of the Nome country for the five years ending in 1903 was $21,059,177.69. Estimating the gold product of 1904 at $4,500,000.00 makes a total of $25,559,177.69. Of this sum $68,828.57 is the value of the silver product.

The mint returns from the Nome country for each year since the discovery of gold are as follows:

1899, Gold	$ 2,400,000.00
1900, Gold	5,100,000.00
1901, Gold	4,110,712.12
1901, Silver	20,979.57
1902, Gold	4,542,188.00
1902, Silver	19,681.00
1903, Gold	4,437,449.00
1903, Silver	28,168.00
1904, (Estimated), Gold	4,500,000.00
Total	$25,559,177.09

This is the official estimate of the precious mineral product of Seward Peninsula. It is known beyond question that this value of gold and silver has come out of this country. It is also probable that a considerable quantity of gold from this country may have gone into the mints with gold from other regions. A quantity of Nome gold also has been used in the arts, principally by manufacturing jewelers. I believe that the gold product of Seward Peninsula is at least $2,000,000 more than is shown by the mint returns. The mint estimate for 1899 is too low. If the beach produced $2,000,000 in 1899, and it is generally believed that the output was this much, the gold product of the Nome country for that year is considerably more than $3,000,000. The mint returns for the subsequent years are as accurate as can be obtained, but they are less than the product of the country. The output of the dumps taken out the past winter will make the total yield of the precious metals from Seward Peninsula near $30,000,000.

Weighing Gold After the Clean-up.



Photograph by B. B. Dobbs.

The Ptarmigan is Snow-colored in Winter and Tundra-hued in Summer.

PTARMIGAN, (ARCTIC GROUSE) DOMESTICATED BY JOHN H. BRAND.

Politics in Alaska

THE political conditions in Alaska have not assisted in the development of the country. The object of this publication is to tell the story of Northwestern Alaska from a commercial point of view, and as politics have had an influence upon the commerce of the country, some of the facts in regard to political conditions constitute a part of the subject matter under discussion.

Alaska has neither state nor territorial form of government. It is a district governed directly by congress. It is a province of the United States occupying the same relation to the government as our recently acquired insular possessions. The district is divided into three judicial divisions. The federal officials of each of these divisions are a district judge, a district attorney, and a United States marshal. The district judges select the clerks of their courts and appoint the commissioners of the various mining precincts. These commissioners are ex-officio justices of the peace and by designation are recorders of the districts in which they have their jurisdiction. The federal appointments in Alaska are made by the president and confirmed by congress, and, notwithstanding the protests of Alaskans, the appointees have been selected from various parts of the states. Citizens who live in Alaska, who have large property interests in the district, and whose identification with the country means a life work in the Northland, have been ignored and excluded from federal office. We are in the same position the unhappy South was in after the war and during the reconstruction period. We are governed by carpet-baggers. I mean no personal reflection in using this odious term. Some of the federal officials of Alaska are honest and capable men and their relations with the country have been helpful and wholesome. A man can be a carpet-bagger and be honest and intelligent, and honesty and intelligence never require excuses nor apology. These qualities command the respect of the people all the time and in all communities. But there have been federal appointees in Alaska who have not commanded the respect of the community, and their administrations have been unsatisfactory and hurtful to the country. The regime of the first federal judge in the Nome District did more to hinder the development of Seward Peninsula than all the failures of business enterprises that have been made in this part of Alaska. His administration unsettled titles, or rather, it failed to confirm titles, and opened an avenue for much expensive and unnecessary litigation. Capital is always wary of imperfect or unquiet titles, and the result of this administration was a frightening away of capital which was needed to develop the mines. Many enterprises that might have been inaugurated were either turned down or held in abeyance. The local banks in Nome drew the strings tighter around their pokes, and for sufficient business reasons declined to make loans upon valuable mining claims because of the uncertainty of ownership.

If Alaskans had the right of ballot, they might elect a man whose misconduct would create similar disturbances, but if we had territorial form of government it is not probable that there would be any such result. The actual residents of Alaska are strong men. They belong to the class of pioneers. They are the same type of men that landed at Plymouth Rock or subsequently settled in the Virginia colonies. They have the same character as the men that led the westward march of empire. It was this class of men that converted the western wilderness into farms and orchards. They made our mining laws in the camps of California. They have laid the foundation upon which the superstructure of our nation is builded. The men of our Northland may be stronger than these, because Alaska is a country in which weaklings can not thrive. Besides the rigor of the climate, the obstacles which nature has placed in the path of the fortune seeker make this country absolutely unfit for the weak and timid. The strong, courageous man loves to combat difficulties. There is zest in a struggle under adverse conditions. If these men of the North were permitted to govern themselves, they would work out their own destinies and the destiny of this new country unhampered by the conditions with which they are now surrounded.

The wheel of progress moves slowly and it may be several years before these resolute American citizens, who were disfranchised because they left their homes to assist in a work that will add to the wealth and greatness of the nation, are emancipated and restored to all the rights of citizenship. In the meantime congress can do much to ameliorate their condition by enacting a law giving them the privilege of electing a congressional delegate who will voice their needs and represent them in the law-making power of the United States. The president can assist us and win our everlasting gratitude by appointing men to office in Alaska who are bona fide residents of the country and personally and directly interested in its development. "Alaska for Alaskans!" should be the shibboleth of every man in the Northland.

Photograph by B. B. Dobbs.

ESKIMO WOMEN AND CHILDREN ARE BUSY IN BERRY SEASON.

Alaskan Dogs

THIS book would not be complete without some kind of a mention of the dogs of the country. Dogs have been very useful animals in Alaska. They haul sleds in the winter time, and they carry packs during the summer season. But the period when the dog accomplishes the most work is after the snow begins to fly. All summer long many of the dogs have nothing to do but sleep in the sunshine and forage for food. The dog that is "native and to the manner born" will lie on the sidewalk for hours and let hundreds of people step over him or walk around him. He is apparently oblivious of his surroundings and seemingly indifferent to any fear of injury. During the summer season an observer unacquainted with the country and its denizens would pronounce the Alaskan dog the laziest brute in creation.

But the first snow of the season transforms him into a new being. He seems to be electrified, and all the dormant life and energy are aroused to highest manifestation. He wants to get in the harness. A dog may be an "old soldier" in a team, but in the beginning of the winter season he is as frisky as a puppy, and on his first trip with a team will give promise of plenty of energy and industry. But his character is like the character of a great many people. He soon gets tired of his work, and he knows how to shirk the responsibility of doing his share of the labor. The dog that is the greatest favorite in Alaska is the one that is used for the leader of the team. The leader is always an intelligent animal. Some of the leaders of dog teams have eyes that are almost human in expression. Leaders are trained to obey the command of "mush-on," "gee," "haw," and "whoa." They know more than this, but they can't talk and tell us how much they do know.

Travelers who have been caught in blizzards, and have missed the trail and become bewildered and lost, have trusted to their dog teams, which almost invariably have brought them to a place of refuge. But the Alaskan dog is sui generis. He is not very far away from his wolf ancestry. He has not yet learned the happy faculty of expressing himself by barking, but he has a prodigious capacity to howl. During the long winter nights some of the gatherings of dogs bear evidence of premeditation. A great convocation will assemble, and if the assembly place happen to be in the vicinity of your habitat your slumber will be disturbed by a concert louder and less musical than Sousa's band. There are many varieties of dog voices pitched in many keys and tones, and these dogs seem to be infinitely happy when howling.

The Eskimo dog has a wooly coat to protect him from the intense cold of the winter. His feet are hard, and he can travel a great distance over ice and snow without becoming foot-sore. Dogs from the states are called "outside dogs," and until they become acclimated and adapted to the country, a short winter journey will injure their feet until they leave a trail of blood. But such a misfortune seldom befalls the native dog. He knows how to protect himself in cold weather by digging a hole in the snow, and getting into it and away from the cutting blasts of the Northland. In the severest weather he will lie down in a curled position on the crusted snow, and sleep as soundly as a high-bred dog in the warmest kennel.

The natives breed their dogs with wolves in order to secure a strain of toughness and durability. A dog that belongs to an Eskimo receives no consideration except in feeding and the native dogs of Alaska manifest very little of the trait which we designate as affection. They may fawn and look supplicatingly and wiggle their tails when they are hungry, but when their stomachs are full they are indifferent to caresses and prefer to be left alone. A disease called hydrophobia afflicts dogs in Alaska. A dog suffering from this malady, which is always fatal, can infect another dog by biting him, but there is no case of a person being infected with rabies from the bite of a mad dog in Alaska. Usually when a dog is afflicted with this disease he acts like something that is crazy and travels until he is shot or until he dies.

Fish is the principal diet of dogs in this part of the country. A native dog will eat raw fish in preference to bacon, and during the summer season if his master fails to provide him with his accustomed food he will go fishing. This story may sound fishy, but an Eskimo dog knows how to catch fish when he is hungry.

Of all the lower animals the dog is man's best friend. In Alaska his friendship has been tested by patient service. A dog is the inseparable companion of the Alaska prospector. He has been with him when the adventurous and restless spirit of the man has taken him into strange countries of the Northland guarded by morasses, mountains and treacherous rivers in the summer time and by the merciless blizzard in the winter. He has shared the hardships and suffering of his master, and more than one chapter of misfortune in the Alaskan wilderness has ended by the sacrifice of a dog for food.

THE MIDNIGHT SUN.

Recapitulation

I HAVE endeavored to portray the various aspects of Northwestern Alaska. I have tried to describe the country's physical appearance and climatic conditions; have tried to tell of its resources, and to tell where gold has been found in quantities designated as pay; have tried to give some idea of the extent of its pay deposits; have referred to the vast areas of low grade gravels much of which is entirely undeveloped, and have designated the methods of mining in vogue and the efforts that are now being made to develop these regions; I have told all I know about quartz, and given the reader all the information obtained from prospectors in remote regions during a newspaper career of pretty near four years in Nome; have discussed the subject of tin, which I believe to be a promising industry, and Northwestern Alaska the one place in United States territory where tin will be produced in large commercial quantities; I have tried to draw a pen picture of the towns and mining camps, and the environment of the people who live in this part of the world; in short I believe I have endeavored to look at this country as it is now from every conceivable point of view. In all that has been said an attempt has been made to keep well within the bounds of the truth. This little volume is not a mining company's prospectus and no effort has been made to present any feature of this truly wonderful country in an alluring form, and I take this opportunity of saying that what has herein been set down is the "frozen truth."

But, after all has been said, what are the author's conclusions and deductions in regard to this country? What opportunities does it offer to the poor man in search of a fortune? What opportunities does it offer to the capitalist who has money to invest and desires to place it where he will get the largest returns? What are the prospects for the immediate and remote future?

The reader in analyzing the facts that have been presented to him will say gold was discovered in this country in 1898 and active mining operations were begun in 1899. There have been six years of work in which the gold product of this country has been $30,000,000. This is only $5,000,000 the year. Ergo, the output of the mines of Seward Peninsula does not indicate the fabulous wealth which some of the descriptions suggest. But I beg the reader to consider this fact: The mining season of Nome is only about 100 days each year. In six years the length of the total of mining seasons is twenty months. Some of the gold that the country has produced has been taken out of the winter diggings, but the quantity that has been extracted in the winter season is considerably less than $5,000,000. It is an honest estimate to assume that the total product of summer work is $25,000,000, or $1,250,000 the month. This point of view indicates that the country contains much greater mineral wealth than a point of view which perceives only the yield of $5,000,000 the year. If Seward Peninsula had a climate like California the annual gold product now would be fifteen million dollars and possibly twenty.

As to the permanency of the placer gold fields there is no question. The great extent of ground which is known to contain gold cannot be worked out under the most favorable conditions in a quarter of a century. Under the conditions which exist in this country it appears to me that there is work in the placer gold fields for the next 100 years. This is merely an individual opinion, but it is a reasonable deduction from facts within my knowledge. Future gold discoveries, which undoubtedly will be made, will add to the permanency of this country.

The opinion of a mining expert has been quoted as follows: "I can stand on Anvil Mountain and my range of vision will include an area of mineral ground which contains more gold than any other similar area of the world." Roughly estimated this area has produced half the gold that has come out of Seward Peninsula. I do not believe that the amount produced is one-tenth of the value that remains in the ground.

A country of this character, possessing wonderful prospects, and prodigious possibilities in addition to these prospects, must be a good country for any man in quest of a fortune. But mining is a business and it must be understood by the person who attains success in it. A tenderfoot, or as he is known in Alaska, a cheechako, may strike a rich claim and take a fortune out of it within a comparatively short time and by very little effort. But the serious business of mining, the knowledge that enables men to appropriate and utilize by means of ditches the water that will wash thousands of cubic yards of gravel daily; the knowledge that enables men to plan and construct immense dredgers and install them on ground which they know to be adapted for the use of this kind of mining machinery; this kind of knowledge is the result of training and an aptitude for the business of mining. Persons possessing this kind of knowledge should have no fear of failure in a country that possesses the gold resources that are known to exist in Northwestern Alaska.

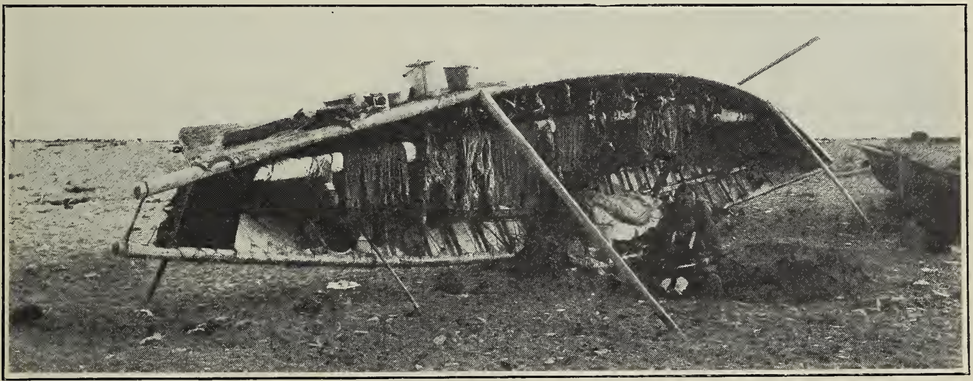
In this age of concentration of capital and wonderful power of money, the poor man's opportunities in the ordinary field of endeavor are very much restricted. But a new country possessing ordinary advantages must present opportunities to the energetic, industrious and intelligent poor man which he would never find in the busy world on the developed side of the frontier.

The Nome country recently has been spoken of as not a poor man's country. But I do not know of any country today where there are better opportunities for a poor man, if he be made of the right kind of material, than this part of Alaska. By a poor man I do not mean one who is not possessed of a dollar. Alaska is a bad place in which to be "broke," particularly at the approach of winter. But the poor man who is not afraid of work and who has enough money for a grub-stake of a year or so; the poor man who has brains as well as brawn will find opportunities in Seward Peninsula to get ahead in the world much more rapidly than he will in any other part of the United States. I would not advise any young man to leave home and friends and profitable employment to seek a fortune in this country. Many people who do not understand the conditions and who are a misfit in the country have gone to Alaska, and have found the environment different from what they anticipated; and the ultimate result very often has been pitiful failure. But if a poor man be healthy, strong and industrious, and have the proper conception of what he has to contend with, and apply himself industriously and with the spirit that is required to succeed in any undertaking, he should succeed.

If I were to offer advice to capitalists there would be fewer strings upon this advice than upon the advice given to the poor man. It is obvious that with the great undeveloped resources that exist in this land; the gold that awaits but the coming of water to be washed out of the gravels and converted into current coin of the realm; the precious dust in the streams and hills of the interior where railroads must be constructed to furnish transportation facilities in order that it may be extracted so as to yield a profit to the operators; the quartz regions to be developed; the tin properties as yet in their infancy; that these and many other features call for capital. There are splendid opportunities in many parts of this country for the investment of capital, places where money can be made to yield ten-fold and more. But money cannot be sowed broad-cast in this country with the expectation of producing a bountiful crop of gold dust. If there have been capitalistic failures in this part of Alaska, the failure is the fault of the management and not of the country. In a country that possesses so many opportunities for profitable investment as this country possesses, it is shameful, if not criminal, that there have been failures.

The country needs capital to develop its resources. The country offers most extraordinary opportunities to capital. I have no hesitancy in advising capital to go there, but this advice is qualified with an admonition: "Be wise in selecting the person who is to make the expenditure." When we quit charging up failures to mismanagement there will cease to be any failures. Capital, managed by men who know something about this country, understand the conditions as well as the resources, men who understand mining, will be as safely invested in Seward Peninsula as it would be in bonds, and vastly more profitably invested.

Success in the business world is a matter of method and management. Success in mining to a great extent is dependent upon the same factors. The first essential is to obtain ground that has got the values in it. Having that kind of ground the right kind of a man as manager will make the mining operations successful, if the work can be successfully done.



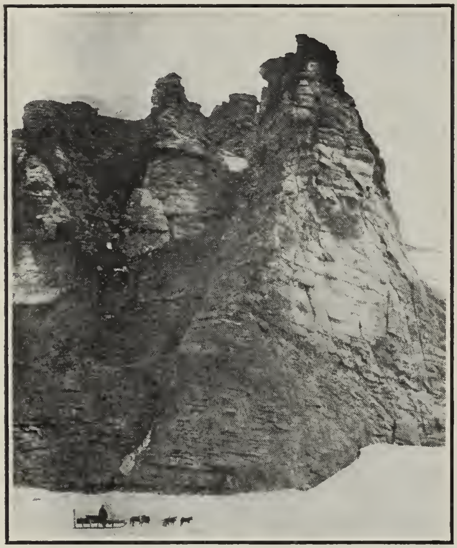
Photograph by B. B. Dobbs.

AT THE END OF THE DAY'S JOURNEY.

The Eskimo Makes a Home of His Boat.

Developing Tin Mines

Among the development enterprises of Seward Peninsula this year the work planned by the United States Alaska Tin Mining Company is worthy of note. This company's property is situated on Cape Mountain and consists of ledges. The assays and mill tests of the ore have shown values in tin that have encouraged the company to ship this year from San Francisco to Tin City a ten-stamp mill of forty tons daily capacity, a fifty-horse-power Corliss engine, two Wilfley concentrators and one shot drill. With this outfit goes railroad tracks, cars, pipe and other equipment. It is the intention of the company to concentrate a large quantity of tin ore this season and ship it to Puget Sound. Partial arrangements have been made for the construction of a smelter to reduce tin ore, and to be situated somewhere on the Sound. This is preliminary work for the development of the tin mines of Northwestern Alaska. A demonstration of the values of these mines has been obtained by John E. Burton, of Geneva, Wis., president and treasurer of the United States Alaskan Tin Mining Company. His successful operations in the iron mines of the Gogebic Range were the beginning of the development of this wonderful iron region, and I hope that he will be as successful in his work of developing the tin mines of Northwestern Alaska.


CAPE PRINCE OF WALES.

Mention heretofore has been made of the splendid work Mr. W. C. J. Bartels is doing toward the development of the tin ledges of Cape Mountain. On Lost River in the York region, Governor Hutchinson, of Idaho, is developing a tin ledge that has a prospect of becoming one of the greatest tin mines in the world. Dr. Palmerle, of New York, is at the head of a company that is exploiting the placer tin deposits of Buck Creek, and there are several other companies operating in this vicinity. Most of them have demonstrated the practicability of mining placer tin in this region.

Statistics of the District

STATEMENT OF THE REVENUES AND EXPENDITURES OF ALASKA, FISCAL YEAR 1869 TO 1904 INCLUSIVE.

RECEIPTS.

Customs	$ 532,344.10
Internal revenue	157,609.57
Sales of public lands	30,779.79
Tax on seal skins	7,562,791.07
Rent of seal islands	990,000.00
Rent of islands for propagating foxes	9,400.00
License fees	305,967.76
License fees collected outside incorporated towns	263,322.45
License fees collected inside incorporated towns	73,380.08
Funds available for court expenses (unused balances)	22,483.92
Funds not available for court expenses	28,942.36
Customs fines, penalties, etc	40,073.15
Judicial fines, penalties, etc	51,656.19
Fees and costs, judicial	8,445.88
Miscellaneous customs fees, etc	27,911.64
Registers' and receivers' fees	2,985.62
Rent of government buildings, etc	23,954.68
Insurance fees	105.00
Depredations on public timber	13,526.83
Miscellaneous	36,094.64
	$10,181,774.73

EXPENDITURES.

Salaries, governor, etc	$ 550,356.23
Contingent expenses of the territory	35,878.84
Salaries and expenses, office of surveyor general	47,997.16
Collecting customs revenue	839,239.49
Collecting internal revenue	31,089.42
Expenses of United States courts	*2,528,313.42

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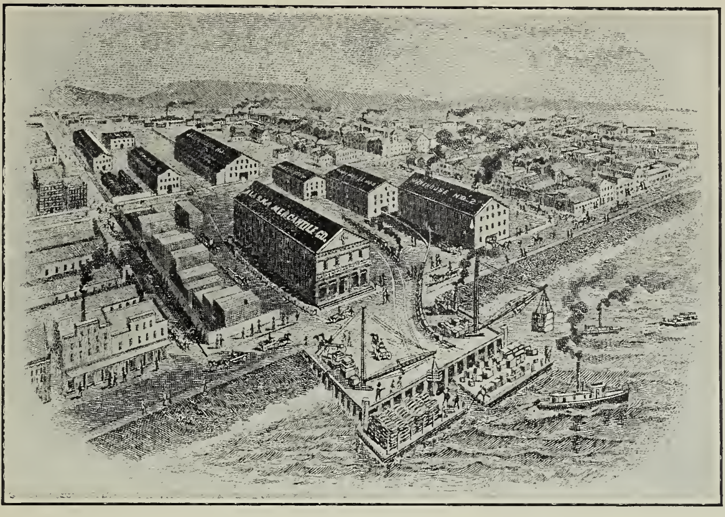
*Includes amounts reported by the auditor for state and other departments as collected and disbursed by judicial officers in Alaska, but which under the law are not covered into the treasury, nor included in the receipts here stated.

Expenses, office United States marshal	83,233.58
Salaries and expenses, agents at seal fisheries	330,096.14
Protection of sea otter, seal and salmon fisheries	255,225.30
Expenses of revenue vessels in Alaskan waters	1,430,898.37
Scientific investigation of the fur seal fisheries	41,000.31
Refuge station, Point Barrow	37,430.53
Construction and repair of buildings, etc	119,332.71
Military roads and bridges	100,000.00
Military telegraph and cable lines	935,548.67
Alaska boundary survey	148,414.53
Light and fog signal stations	517,972.10
Reindeer for Alaska	154,933.98
Support of Indian schools	52,306.98
Education of Indians	22,160.45
Education of children	526,117.03
Schools outside incorporated towns	108,070.63
Salaries and commissions, land office	28,941.56
Pay of Indian police	30,905.18
Supplies for native inhabitants	220,900.09
Expenses of steamer "Albatross"	20,000.00
Expenses steamer "Thetis"	66,433.04
Survey of Yukon River	98,633.14
Revenue steamer for Yukon River	39,999.16
Relief of people in the mining regions	195,927.50
Bering Sea awards and commission	483,842.65
Miscellaneous expenses	222,239.61
	$10,303,437.80

NOTE: The expenditures for collecting customs and internal revenue, revenue vessels, Indian schools and police, and for salaries and commissions at land offices, are the estimated amounts paid in Alaska from general appropriations made for the entire service. No separate appropriations for these objects are made for Alaska service.


ALASKA MERCANTILE CO.

ALASKA MERCANTILE COMPANY

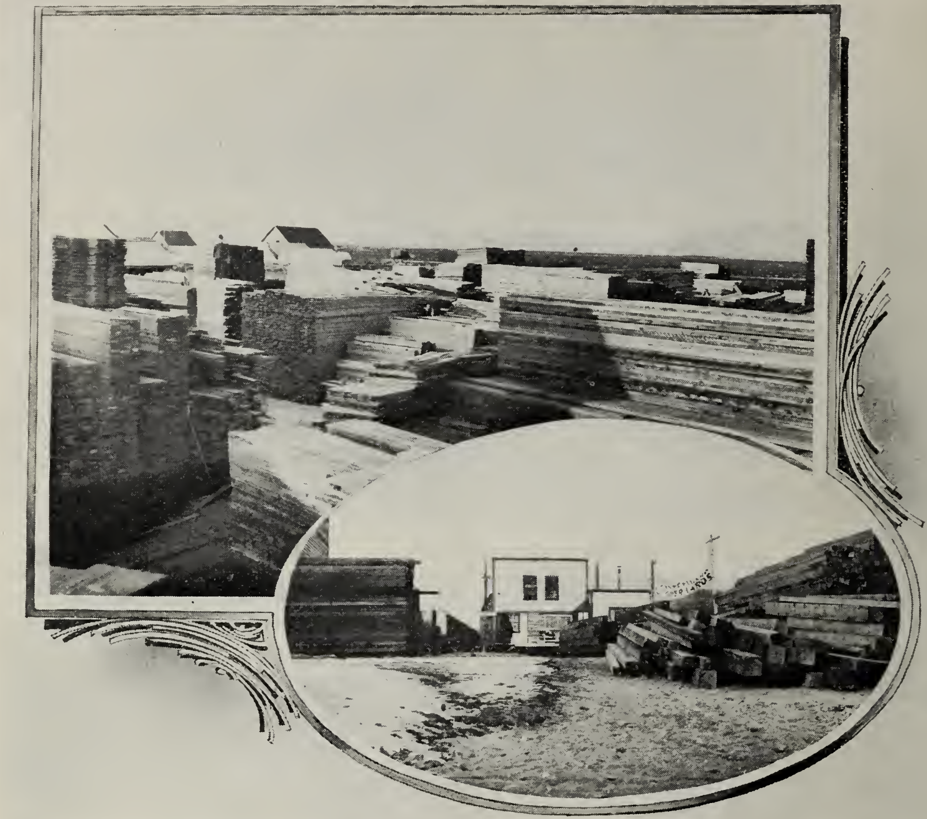
The Alaska Mercantile Company, successors to the Ames Mercantile Company, is the largest and best known Trading Company in Alaska.

It was originally organized and established at Dawson in the year 1898, and through popularity and favor has grown to be one of the leading mercantile institutions throughout the Yukon Territory.

In the year 1900, the present Alaska Mercantile Company had constructed in Nome, the largest and finest store building in Alaska, together with six large fire-proof warehouses of sufficient capacity to hold provisions and other necessities for every inhabitant of Nome and the surrounding country for a period of twelve months—this is Nome's Department store, where everything needed may be obtained at prices that can be justly compared with those of well known stores in the United States, which fact can be better understood when taking into consideration the great volume of goods shipped during the four months of open navigation and the great eagerness of manufacturers and producers to introduce their goods into this fast-growing country, together with the strong competition amongst the steamship lines, which is not only advantageous to the seller but also to the consumer. A very large wharf and pier has been recently built in front of the store building and warehouses, to facilitate the direct and expeditious landing of freight consigned to the Company from the steamers to the railroad cars of the Nome-Arctic R. R. Company.

Although Nome is comparatively a new town, the Alaska Mercantile Company is always equipped with commodities necessary for the convenience, comfort and luxury of civilized man, and are always in position to give the public prompt and reliable service, by reason of having sufficient and efficient salesmen and clerks in each deportment, together with competent managers.

The growth and popularity of the Alaska Mercantile Company are evidences that only the best goods at the lowest prices are placed before the public—which means that everybody is pleased and satisfied with the attention and the supplies purchased at their store.



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L. B. Tanner and W. A. Clark own and conduct at Nome, the largest lumber business in Alaska. They keep in stock from 4,000,000 feet to 6,000,000 feet of every description of lumber needed by the builder, contractor and miner, and operate a mill in Nome for surfacing and cutting lumber to any required size. They own a saw mill in King County, Washington, cut their own lumber and ship most of it in chartered vessels, thereby eliminating the expense of the middle man. By these wise business methods they are able to sell to the consumer at prices that shut out aggressive competition.

Tanner & Clark have adopted correct business methods. They do not believe that the public's necessity is their opportunity. "If Nome should burn today, the price of lumber tomorrow would be the same as it was yesterday," said Mr. Tanner. Men who adopt and practice these business methods deserve all the success that comes to them.

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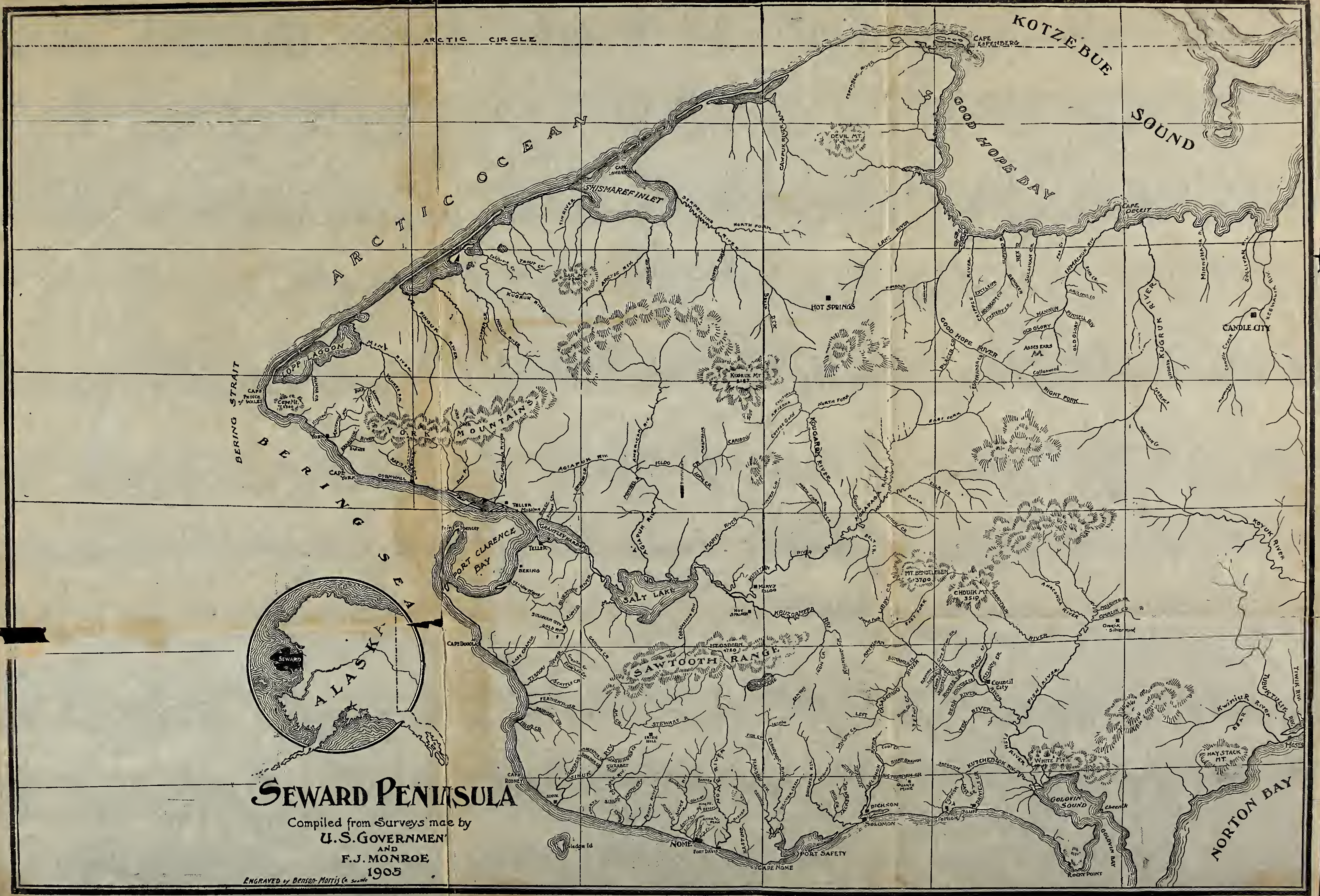

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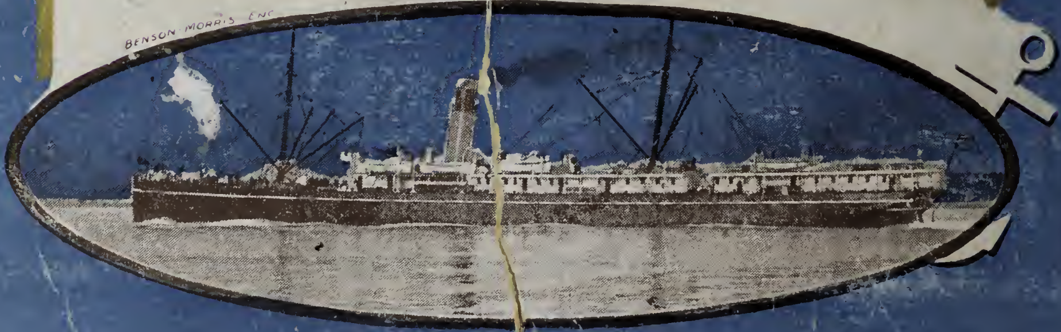

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